

THE FUNCTIONALITY OF FOCUS: AN INVESTIGATION INTO THE
INTERACTIVE EFFECTS OF LEADER FOCUS AND TASK INTERDEPENDENCE

A Dissertation

by

THOMAS BRADY HARRIS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2012

Major Subject: Management

The Functionality of Focus: An Investigation into the Interactive Effects of Leader

Focus and Task Interdependence

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Approved by:

Chair of Committee,	Bradley L. Kirkman
Committee Members,	Murray R. Barrick
	Abbie J. Shipp
	Aaron B. Taylor
	Richard J. Lutz
Head of Department,	Ricky W. Griffin

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ABSTRACT

The Functionality of Focus: An Investigation into the Interactive Effects of Leader
Focus and Task Interdependence. (May 2012)

Thomas Brady Harris, B.B.A., Texas Tech University; M.B.A., University of Florida

Chair of Advisory Committee: Dr. Bradley L. Kirkman

Team leadership research has largely relied on traditional dyadic models (i.e., those capturing one-on-one relationships between a leader and follower) to explain team-level phenomena. Despite recent advancements, much of this research falls short of addressing the complexity inherent to teams. One promising alternative to the traditional perspectives, functional leadership theory, moves beyond the constraints of dyadic models and instead advances a needs-based approach for understanding team leadership (i.e., effective leaders are those that meet any and all team needs). Although intuitive, the ambiguous nature of simply meeting team needs does not provide sufficient specificity as to how exactly leaders meet team needs. In an effort to address this issue, I introduce a multi-dimensional construct, called leader focus, to explain how leaders meet team needs by focusing their efforts on teamwork or taskwork (i.e., person-task focus) as well as different relational entities in the team (i.e., entity focus). In total, I propose six unique foci of team leadership: individual task-focus, team task-focus, subgroup task-focus, individual person-focus, team person-focus, and subgroup person-focus. Next, using social interdependence theory, I hypothesize that individual-focused leadership is

most effective when task interdependence is low, whereas team- and subgroup-focused leadership are most effective when task interdependence is high. Further, person-focused leadership is hypothesized to influence team effectiveness by way of interpersonal processes; task-focused leadership is argued to influence team effectiveness via task-related processes. In a sample of 89 firefighting crews, partial support is found for the multi-foci model of team leadership. Team task-focused leadership influences team task performance indirectly through task processes; team person-focused and subgroup person-focused leadership influence team helping behaviors through interpersonal processes. Moreover, the relationship between individual task-focused and subgroup task-focused leadership on team processes is contingent on task interdependence. Theoretical and practical implications are discussed.

DEDICATION

To my family, including those members who have passed and are yet to come.

ACKNOWLEDGEMENTS

God has definitely been watching over me the past few years (as always). Without Him, there's simply no telling where I'd be. Additionally, there are a great number of people that have played influential roles in my pursuit of, and consequently achievement of, this doctoral degree. Unfortunately, I am afraid it is impossible to acknowledge all of them in this section. Thus, I will try to stick to only the most key players over the past several years. I offer sincere apologies to the numerous friends and family who are not explicitly mentioned herein.

To begin, there are several faculty members at Texas A&M that have gone above and beyond their formal duties to help me out over the past several years. However, no one has been more instrumental than my committee chair, Dr. Brad Kirkman. When I wanted to quit the Ph.D. program and questioned whether I could succeed in academia, Brad was there to encourage me and push me forward. He also shaped me as a researcher and teacher, but I consider these secondary benefits. Brad didn't just help me earn a degree and start an exciting profession, he provided me with an excellent example of how to treat folks the right way. Regardless of what my vita looks like in a few years, I hope people say the same thing about me.

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statistical issues, but also provided constant encouragement and a smiling face. This was vital to my success and well-being. Aaron exceeded all of my expectations for an outside committee member, providing thorough revisions, quick turn-arounds, and general counsel whenever needed. More importantly, he did it all with a smile. There is not a nicer, more genuine person at Texas A&M. Finally, Rich graciously served as a special appointment from the University of Florida. Without his investment in me while I was a graduate student at Florida, I probably would not have chosen to pursue a career in academia. Without his encouragement while I was at A&M, I probably would not have a career in academia.

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Importantly, my family also played a great role in my success. My parents worked tirelessly to provide me (and my brother) with great opportunities, a strong work ethic, and a solid moral compass. Without them, I would have fallen well short on many personal and professional fronts. Similarly, my little brother has been a big source of encouragement throughout the last several years, even though he still has no idea what a "Management Doctor" actually does. Taken together, I'm definitely thankful to have such a supportive family.

Related to the previous paragraph, I was blessed with tremendous grandparents that helped me succeed in this (and many other) endeavors. Unfortunately, each of my grandparents passed away while I was enrolled in doctoral studies. These were not easy losses to accept, but their lasting legacies remain an important component of my life. So, although I am deeply saddened that I cannot celebrate this degree with Mamaw and Papaw Sharp and Grandma and Grandpa Harris, I do feel like they would have been proud knowing that their hard work helped me to accomplish such an important personal milestone. Granted, they probably wouldn't understand why it was necessary to pursue a Ph.D. in the first place, but that's another story.

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CHAPTER I

INTRODUCTION

1.1 The Research Problem

Teams are being used by an overwhelming majority of today's organizations to accomplish important business objectives (Hills, 2007; Kozlowski & Bell, 2003; Lawler, Mohrman, & Ledford, 1995). As a result, in a recent review, Morgeson, DeRue, and Karam (2010: 6) called them "a fact of organizational life." Given the popularity and remarkable staying power of organizational teams, it is not surprising that researchers have devoted considerable attention to understanding team effectiveness (see Kozlowski & Bell, 2003, and Mathieu, Maynard, Rapp, & Gilson, 2008, for reviews) and, by extension, the impact of team leadership on team effectiveness (e.g., Morgeson et al., 2010; Zaccaro, Heinen, & Shuffler, 2009). Although an increased focus on team leadership has helped to clarify how leaders affect team effectiveness (Day, Gronn, & Salas, 2006), a thorough understanding of team leadership has remained elusive (Morgeson et al., 2010; Zaccaro et al., 2009).

A recent review of team leadership suggests there are at least two critical reasons that a complete understanding of team leadership has yet to be achieved (Morgeson et al., 2010). First, past work has often examined only a narrow set of leadership activities, resulting in "a fairly incomplete account of the range of ways leaders can help their

This dissertation follows the style of *Journal of Applied Psychology*.

teams succeed” (Morgeson et al., 2010: 6). This is an important point, as effective team leadership likely consists of exercising more than just a few “one-size-fits-all” behaviors across all situations (e.g., transformational leadership; Bass, 1997), especially given the complex nature of teams (Mathieu et al., 2008). A second reason that team leadership is not more thoroughly understood stems from the abundant attempts to apply traditional dyadic leadership models (i.e., those capturing one-on-one relationships between a leader and follower) to the team context without distinguishing between leader-member and leader-team interactions (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006; Morgeson et al., 2010; Salas, Stagl, & Burke, 2004; Zaccaro et al., 2009). While leader-member interactions deal with dyadic relationships, leader-team interactions refer to a leader’s focus on the team as a whole as an intact entity. Zaccaro and colleagues (2009: 83) note that many popular leadership theories, including leader-member exchange theory (LMX; Dansereau, Graen, & Haga, 1975) and path-goal theory (House, 1971; House & Dessler, 1974), inform us only of how leadership influences individual subordinate outcomes (e.g., employee performance, satisfaction), but fall short of explaining how leaders drive entire teams closer to synergistic thresholds, or the point where “collective effort accomplishes more than the sum of individual abilities or efforts.” This is a particularly concerning limitation given that meeting synergistic thresholds, and ultimately achieving the assembly bonuses that come from doing so (Collins & Guetzkow, 1964), is likely the reason why organizations have placed so much emphasis on organizational teaming in the first place. Indeed, when discussing the superiority of group performance over individual performance in decision-making

teams, Watson, Michaelson, and Sharp (1991: 808) state, "...groups perform at or above the level of their best member so consistently that the greatest contribution of group-consensus decision making may be the fact that going with the group every time may virtually eliminate a really bad decision and, in most instances, result in decisions of a higher quality than would be possible for even the group's most knowledgeable member." Although practitioners and researchers alike agree that teams can be a beneficial part of organizations and leaders are critical influencers of team effectiveness, we have yet to reach an appropriate paradigm for examining leadership in today's complex and dynamic teams.

A potentially promising approach to understanding team leadership lies in functional leadership theory (Burke et al., 2006; Kozlowski, Watola, Nowakowski, Kim, & Botero, 2009; Morgeson et al., 2010; Zaccaro, Rittman, & Marks, 2001). Functional leadership theory argues that the purpose of team leaders is to meet any and all team needs so that members may achieve their goals (McGrath, 1962). Functional leadership theory differs from other leadership perspectives in that it does not focus on specific leader behaviors, but rather allows for leaders to have a great deal of discretion in determining what they do to meet whatever needs to be done (Hackman & Walton, 1986; Zaccaro et al., 2001). Moreover, this discretion also accommodates any number of leader interactions (i.e., leader-member, leader-team, leader-subgroup interactions). As a result, functional leadership theory's explanatory power is not hindered by the limitations described above.

Despite these attributes, however, the functional approach to leadership creates an interesting paradox with difficult tradeoffs for those seeking a complete understanding of team leadership. At the highest level, functional leadership theory provides a persuasive explanation for team leadership effectiveness, but it remains too general to offer specific prescriptions to leaders. In fact, even proponents of the functional perspective have acknowledged that some tenets of the theory may be tautological (Zaccaro et al., 2001), which lends credence to the questions surrounding its prescriptive power. For example, according to the theory, when a team is successful, the leader, by default, is also successful. In such a case, there is no way to determine whether the leader's actions or behaviors actually led to better results or if other non-leadership factors simply made the leader's action appear more successful.

Taken together, functional leadership theory may have more difficulty explaining what *exactly* the leader does in any meaningful detail and how such lessons from the theory can be generalized to different teams. At the opposite end of the spectrum, however, an extremely detailed analysis of the specific behaviors that demonstrates how leaders satisfy team needs may lose sight of the high-level "do whatever it takes" discretionary perspective that makes functional leadership theory so promising. In other words, a comprehensive list of leader behaviors and the situational contingencies that influence their effectiveness may yield results too unwieldy to apply. Thus, a challenge inherent in the functional leadership approach is balancing the high-level principles of satisfying any and all teams with the specificity needed to examine how those needs are satisfied.

Recent reviews of functional team leadership have begun to address this issue. Burke and colleagues (2006), for instance, meta-analyzed 50 empirical studies to determine what behaviors were functional in teams. Similarly, Morgeson and colleagues (2010) sought to provide increased specificity to the functional approach as well as acknowledge that teamwork may have different relationships with leader behaviors than individual work. To accomplish these goals, Morgeson et al. (2010) conceptually developed a taxonomy of team leadership functions derived from over 500 specific leader behaviors used in previous leadership studies. In doing so, the authors gave insight into what types of behaviors may lead to specific team leadership functions. Further, the authors shifted the team leadership focus away from the traditional dyadic perspective and toward a true team level orientation. Although the functional approach does not necessarily require such distinctions, the authors indeed improved the understanding of functional leadership as it pertains to teams. To date, however, there have been no empirical tests of the Morgeson et al. (2010) taxonomy.

In addition to providing insight into the specific behaviors inherent to functional leadership and distinguishing between dyadic- and collectively-targeted interactions, Morgeson et al. (2010) also aligned their taxonomy of functions with a popular framework of team performance cycles (Marks, Mathieu, & Zaccaro, 2001). In this framework, it is argued that teams experience recurring transition phases, or periods focused “primarily on evaluation and/or planning activities to guide their accomplishment of a team goal” (Marks et al., 2001: 360), and action phases, defined as “periods of time when teams are engaged in acts that contribute directly to goal

accomplishment” (Marks et al., 2001: 360), over their lifecycle. During each of these phases, distinct team processes, referred to simply as transition and action processes, likely explain how team inputs become team outputs. Additionally, Marks et al. (2001) posited that various interpersonal processes, or “processes that govern interpersonal activities” (368), are vital across all team phases.

Consistent with these arguments, Morgeson et al. (2010) argued that team needs, which in this case refer to the requisite conditions for enabling team processes, would differ across different circumstances and, consequently, leaders would need to perform different behaviors to meet the needs inherent to the most relevant processes. Morgeson et al. (2010) made this distinction by classifying functions, and their subsumed behaviors, into varying process-related categories. In doing so, the authors offered implicit support for the notion that different behaviors enable unique processes. This argument is notable for several reasons. First, the classification of leader functions into process-related categories is noteworthy because it provides a basic starting point for understanding *when* certain leader functions are most important. Second, because the framework described by Marks and colleagues (2001) describes recurring performance episodes and not just a static input-process-outcome (IPO) model, a foundation exists for theoretically exploring how leader functions may differ as the team’s context changes over the course of multiple performance episodes. Such a perspective enables future team leadership models to capture more dynamic components. Finally, by linking specific functions and behaviors with overarching team processes, Morgeson et al.

(2010) provide a preliminary framework for bridging the specificity of behavioral approaches with the breadth of functional approaches to team leadership.

Despite these recent advancements, a full understanding of team leadership remains an unmet goal. However, there are several promising research avenues for improving the current state of the field. First, a more thorough investigation of how other leadership approaches work within the overarching principles of functional leadership theory may provide a more useful balance between precision and explanatory power. For instance, although some researchers have provided preliminary integrations of functional and behavioral approaches (e.g., Burke et al., 2006; Morgeson et al., 2010), these studies have yet to provide clear insight into how the attributes of situational contingency models may enhance our understanding of team leadership. This is problematic because traditional leadership theories have, at least to some degree, demonstrated utility in examining situational variables using a contingency approach (e.g., Fiedler, 1964; Hersey & Blanchard, 1969). In an effort to answer this question, I examine a theoretically important contingency, task interdependence.

Task interdependence, defined as the extent that team members must cooperate with one another, work interactively, and depend on one another to achieve a common goal (Campion, Medsker, & Higgs, 1993; Saavedra, Earley, & Van Dyne, 1993; Stewart & Barrick, 2000), is likely an important contingency for determining the source of team needs because of its influence on workflow arrangements and the different social relationships that are emphasized in each arrangement. For instance, high task interdependence will dictate an intensive arrangement consisting of all team members

working together whereas low task interdependence will dictate a pooled or sequential workflow where individuals can largely work independently of one another (Bell & Kozlowski, 2002; Thompson, 1967; Van de Ven, Delbecq, & Koenig, 1976). Therefore, based on the tenets of social interdependence theory (Deutsch, 1949; Johnson & Johnson, 2005), I argue that individual team member needs are most important in low interdependence tasks and collective team needs are most important in high interdependence tasks. This, in turn, influences how leaders can be “functional” in different task interdependence contexts.

Related to the contingency above, I rely on assumptions made in Kanfer and Ackerman’s (1989) resource allocation model as well as recent team leadership findings (e.g., Kirkman & Rosen, 1999; Wu, Tsui, & Kinicki, 2010) to argue that leaders must carefully choose the direction of their efforts to match situational contingencies. Broadly stated, Kanfer and Ackerman (1989) argue that individuals are incapable of devoting large amounts of cognitive resources to multiple targets without sacrificing the necessary resources for self-regulation. Said differently, individuals (i.e., team leaders) can rarely focus intensely on everything, but they can focus on select areas. In addition to the cognitive restraints that leaders encounter when trying to focus on multiple target types, some researchers have suggested that leaders who simultaneously direct behaviors toward the group and individual-level may compromise overall team effectiveness (Kirkman, & Rosen, 1999; Wu et al., 2010). Thus, it makes intuitive sense to explore the potential targets of a leader’s focus across different situational contexts.

Building on past research, I argue that two dimensions of leader focus, referred to as “person-task focus” and “entity focus”, influence team effectiveness by way of team processes. Further, I posit that these relationships are moderated by task interdependence. Person-task focus is a construct that builds on past work suggesting that nearly all leader behaviors can be classified as person-focused or task-focused (e.g., Burke et al., 2006; Fleishman, Mumford, Zaccaro, Levin, Korotkin, & Hein, 1991). Said differently, leader behaviors either address teamwork (i.e., person-focused aspects of teams such as interpersonal relationships between members, coordination) or taskwork (i.e., task-focused aspects of teams such as setting goals, developing strategies, obtaining resources). A leader rating high in person-focused behaviors would be expected to exhibit behaviors aimed at facilitating the “behavioral interactions, cognitive structures, and attitudes” of team members (Burke et al., 2006: 291). A task-focused leader, however, has behavioral intentions of facilitating the understanding of “task requirements, operating procedures, and acquiring task information” (Burke et al., 2006: 291; Salas, Dickinson, Converse, & Tannenbaum, 1992).

By examining person-task focus from a functional perspective, I extend previous theoretical and empirical work to argue that person- and task-focused behaviors enable different sets of team processes (i.e., meet distinct sets of team needs). Specifically, I posit that task-focused leader behaviors fulfill the needs that enable the task-related processes inherent to both transition and action phases, whereas person-focused leader behaviors meet the needs that enhance interpersonal processes. This is a particularly useful extension because Morgeson et al.’s (2010) recent work did not explicitly

distinguish between the task-related processes inherent to transition and action phases and the interpersonal processes originally proposed by Marks et al. (2001), but rather embedded aspects of interpersonal functions in their classification of transition and action phases. A clearer distinction between task-related and interpersonal processes, especially as they relate to task- and person-focused behaviors, provides a more integrative view of functional team leadership than has been previously afforded. Further, by specifying what leaders can do to enable specific processes, the proposed model is well-equipped to address additional contingency variables that may influence the importance of certain process types on team effectiveness.

Moreover, the inclusion of interpersonal processes into a functional model of team leadership likely provides a solid foundation for future researchers interested in examining how leaders contribute to team emergent states. Specifically, past work has suggested that interpersonal processes lead to positive “cognitive, motivational, and affective states” (i.e.; emergent states: Marks et al., 2001; 357), including collective efficacy, potency, and cohesion. Thus, by addressing how leaders enable interpersonal processes, our understanding of team leadership is poised to move beyond merely how leaders minimize process losses, but also how they facilitate the affective states necessary for maximizing process gains (Hackman, 1983). Related, the current model also offers a starting point for embracing the more complete input-mediator-output-input (IMOI) framework that has been described in recent reviews of organizational teams (e.g., Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Mathieu et al., 2008).

The second component of leader focus, called entity focus, is defined as the central relationship to which a leader concentrates his or her energy (i.e., individuals, the team as a whole, and subgroups within the team). This construct builds upon and expands recent work that has argued for distinguishing between leader-member and leader-team interactions (e.g., Burke et al., 2006; Morgeson et al., 2010; Salas et al., 2004). Recent research has broadly prescribed that team leadership should always be focused on leader-team interactions (e.g., Morgeson et al., 2010), but I argue that this may not necessarily be the case. To justify this stance, I rely on social interdependence theory (Deutsch, 1949; Johnson & Johnson, 2005) to hypothesize task interdependence as an important moderating variable in the leader behavior-team effectiveness relationship.

Specifically, I argue that when task interdependence is low and members are less reliant on one another to complete their tasks, leaders will be most functional when focusing more on leader-member interactions. Conversely, when task interdependence is high, leaders should focus more on leader-team interactions. Finally, the entity focus construct also includes a scarcely discussed type of interaction, referred to as leader-subgroup interactions, to address the relationships nested in member dyads or subgroups within a team. Accounting for these nested relationships not only provides a clearer account of the complex nature of teams (Hirschhorn, 1991), but also answers recent call to acknowledge hybrid work arrangements in teams (Mathieu et al., 2008). This may be a particularly useful addition, especially when team members must work sequentially or

reciprocally (i.e., mid-levels of task interdependence) with only one or a select few other members to complete a smaller portion of an overall team task.

1.2 Summary

In summary, I make three important contributions to the team leadership literature. First, the concept of leader focus, a dual focus construct, is introduced to bridge the gap between the powerful overarching principles of functional leadership theory with the specificity afforded by traditional leadership models. The introduction of leader focus allows researchers to move beyond dyadic, “one size fits all” views of team leadership and toward a more complete understanding of how leadership operates inside the complex realm of teams.

The first component of leader focus, person-task focus, captures a leader’s emphasis on behaviors that directly facilitate the completion of tasks (i.e., taskwork) or those that improve the functioning of interpersonal interactions (i.e., teamwork). Building on a vast literature of IPO models and a commonly accepted framework of team processes (Marks et al., 2001), I argue that task-focused behaviors improve team effectiveness through their influence on task-related processes, whereas person-focused behaviors improve team effectiveness through their influence on interpersonal processes. By addressing how leaders influence different team processes, namely interpersonal processes, I extend the work of Morgeson et al. (2010) to provide a more comprehensive and holistic view of how leaders can be functional within the commonly used framework described by Marks et al. (2001).

A second, relatively unexplored aspect of leader focus, called entity focus, is then introduced to capture which one of three relationship types being targeted by team leaders. Entity focus builds upon the work of Hirschhorn (1991), who suggested that leaders must be concerned with individuals within the team, the team as a whole, and other nested relationships, or subgroups, within the team at all times over the course of a team's lifecycle. However, in an attempt to answer questions stemming from recent work that has found contradictory results (Wu et al., 2010), I argue that leaders should not attempt to focus on all types of relationships at a single time, but instead should focus on only the most important relationship at a given time.

The second major contribution of this study is the incorporation of an important contingency variable, task interdependence. Social interdependence theory provides clues as to how task interdependence influences the nature of team needs, and hence, how leaders might be able to meet those needs. In particular, I argue that individual-focused leadership is most appropriate when task interdependence is low, whereas team-focused and subgroup-focused leadership are more important in the higher ranges of task interdependence. Thus, task interdependence moderates the relationship between leader behaviors and team effectiveness.

Finally, I provide a thorough and empirically testable model of functional team leadership to guide researchers toward more specific propositions regarding team leadership. This model represents one of the most specific and testable frameworks to date. Further, the model is built in a way that accommodates the addition of future contingency variables as well as a more comprehensive listing of mediating variables

(e.g., emergent states). In sum, the hypothesized model provides a novel and potentially powerful way of thinking about functional team leadership.

In the following chapters, I review the literature and provide an overview of what is currently known about teams and their leadership. Next, I present a new theoretical model that addresses previous areas of concern. Specifically, I argue that a leader's focus is critical for influencing important types of team processes and, moreover, meeting the needs relevant to different entities based on varying levels of task interdependence. I then provide the results of an empirical test of the model's hypotheses, followed by a discussion of the implications and potential limitations of the current study.

CHAPTER II

LITERATURE REVIEW & PROPOSED MODEL

2.1 Chapter Summary

In the present chapter, I begin with a review of the team and team leadership literatures before proposing a theoretical model aimed at providing a more powerful and generalizable framework for understanding team leadership. Although the focus of this dissertation is clearly centered on team leadership, many of the theoretical arguments made in this chapter require a working knowledge of more general team research. As such, my review begins with a summary of the work team literature, paying particularly close attention to the origins, evolution, and tenets of the commonly accepted input-process-output (IPO) framework. Further, special emphasis is placed on the complexities of team research and the challenges they propose for researchers.

After providing a solid foundation of general work team research, I shift my focus to the importance of team leadership, which is considered a critical input variable in the IPO framework. This consideration is rooted in the premise that work teams are most valuable to organizations when they have proper direction, adequate resources, and the interpersonal management offered through leadership (Hackman, 1987). My review of the team leadership literature provides a critique of previous approaches applied by team leadership researchers and identifies several challenges that must be faced to improve current understanding. I then present a review of functional leadership theory, which argues that effective leaders meet any and all team needs (McGrath, 1962), as a

promising, but challenge-filled, avenue for conceptualizing how leaders influence team effectiveness.

Next, I introduce and develop a specific and testable theoretical model of functional team leadership that addresses and moves beyond previous limitations. Central to the model is the concept of leader focus, which represents the direction of a leader's efforts and behaviors. Specifically, I argue that two independent constructs, person-task focus and entity focus, combine to create six independent facets of an overall leader focus construct.

Person-task focus captures the degree to which leader behaviors facilitate actual task accomplishment (i.e., task-focused) or the interpersonal interactions between team members (i.e., person-focused). The second component of leader focus, called entity focus, is developed to capture the different types of relationships that leaders can direct their efforts toward. Extending prior work (e.g., Hirschhorn, 1991; Kozlowski et al., 2009; Wu et al., 2010), I argue that leaders can direct their efforts toward any one of three entities within a team: individuals within the team, the team as a whole, and smaller clusters of team members, called subgroups, within the team. When person-task focus and entity focus are paired together, six unique categories of leader behaviors are introduced (i.e., individual task-focused behaviors, team task-focused behaviors, subgroup task-focused behaviors, individual person-focused behaviors, team person-focused behaviors, and subgroup person-focused behaviors).

Finally, I introduce specific hypotheses linking each of the categories above to team effectiveness through distinct groups of team processes. Building upon and

extending prior work, I argue that task-focused categories of leader behaviors influence team effectiveness through task-related team processes, whereas person-focused categories influence team effectiveness through interpersonal processes. I further clarify these linkages by adding an important situational characteristic, task interdependence, as a moderator. Relying on social interdependence theory (Deutsch, 1949; Johnson & Johnson, 2005), I argue that task interdependence, defined as the degree to which team members cooperate with one another, work interactively, and depend on one another to achieve a common goal (Campion et al., 1993; Saavedra et al., 1993; Stewart & Barrick, 2000), influences the nature of team needs and interacts with entity focus to strengthen or weaken the relationships between different categories of leader behaviors and team processes. In hypothesizing interactive effects between entity focus and task interdependence, I offer a powerful explanation for seemingly counter-intuitive results that suggest leaders cannot attend to multiple relationship types without compromising team effectiveness (e.g., Kirkman & Rosen, 1999; Wu et al., 2010). Rather, team leaders may still need to address the needs inherent to different relationships to be functional, but must do so in the appropriate situational context. Ultimately, the hypothesized model offers a comprehensive yet specific, empirically testable framework for examining functional team leadership.

2.2 An Introduction to Organizational Work Teams

Teams, defined here as “collectives who exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an

organizational context” (Kozlowski & Bell, 2003: 334), are being used by the vast majority of today’s organizations to accomplish critical objectives (Hills, 2007; Kozlowski & Bell, 2003; Lawler et al., 1995). A recent review states that teams are so important that they influence our lives every day and play a vital role in the functioning of society (Kozlowski & Ilgen, 2006). Perhaps more impressive is that a thorough search of the work team literature reveals that these types of comments are hardly uncommon or new. For example, research from several decades ago notes that teams can improve decisions, increase human motivation and commitment, make organizational life more livable, and foster creativity and innovation, and, accordingly, should be taken very seriously by researchers and practitioners (Hackman, 1983; Leavitt, 1975). Given the prevalence of work teams along with numerous calls to examine them, it is not surprising that the past 15 years has witnessed an “explosion of work” aimed at better understanding organizational teams (Mathieu et al., 2008: 411).

Although recent team research is responsible for many notable advances, scholars have acknowledged that teams are vastly complex and much remains unknown about what makes teams effective (Mathieu et al., 2008). However, a burgeoning area of study, team leadership, may offer substantial clues for understanding team effectiveness (Burke et al., 2006). In later sections, I will illustrate how the complexities inherent to teams have limited the transferability of traditional leadership models to the team-level. Specifically, I argue that the interdependent nature of teamwork does not always accommodate the application of purely individual-focused or organization-focused principles of leadership. Rather, team leaders must embrace a true team-level

orientation, which likely includes different combinations of individual, group, and within-team relationship-based interactions.

To more closely examine the distinct and complex aspects of teams, my review now shifts toward more a specific, process-oriented view of team research. In total, this research has converged upon at least two largely accepted conclusions. First, in line with my assertions above, prior work has been overwhelmingly consistent in concluding that organizational teams are tremendously complex (e.g., Ilgen et al., 2005; Kozlowski & Ilgen, 2006; Mathieu et al., 2008; McGrath, Arrow, & Berdahl, 2000). Second, even in the face of these complexities, researchers have iteratively developed and refined a solid theoretical perspective for understanding how work teams transform inputs into outputs through mediating variables such as processes and emergent states (Ilgen et al., 2005; Mathieu et al., 2008). These points are discussed in the following sections.

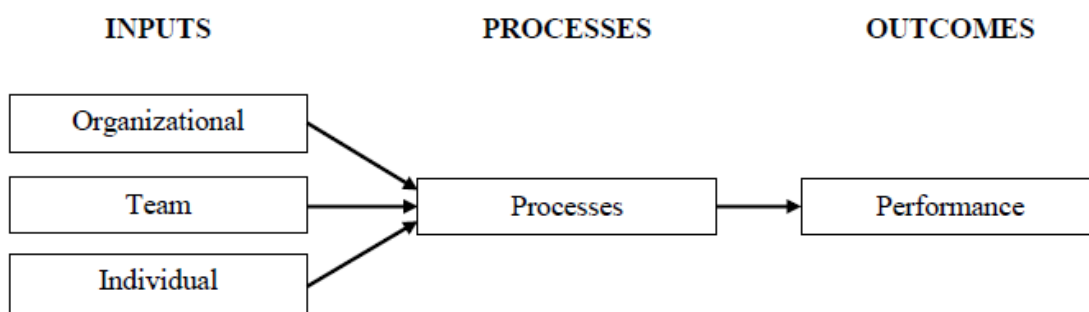


Figure 2.1. Input-process-outcome (IPO) framework (adapted from Mathieu et al. 2008)

2.3 The Input-Process-Outcome Model: A Foundation for Team Research

In his book, McGrath (1964) reviewed previous works on groups and teams by describing the differences between inputs in time 1 and outputs in time 2. The

differences, he argued, could be explained by group interaction processes. Although interaction processes played a key role in earlier works (e.g., Bales, 1950), McGrath's (1964) perspective also acknowledged that inputs were important antecedents to those processes. In fact, this acknowledgement may help explain why McGrath's (1964) IPO model is largely attributed with having laid the groundwork for many of the notable advancements in team research (Mathieu et al., 2008). In this model, *inputs* refer to "antecedent factors that enable and constrain members' interactions" (Mathieu et al., 2008: 412). Team inputs drive team *processes*, which explain how team members transform inputs into meaningful outcomes. More specifically, processes are defined as interdependent sets of cognitive, verbal, and behavioral activities used to plan, organize, and achieve team goals (Marks et al., 2001). Finally, *outcomes* refer to the results and by-products of team activity, including performance and the affective reactions of team members (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Mathieu et al., 2008).

Recent reviews have highlighted a shift in team research, such that 10 years ago researchers were primarily focused on understanding *what* (i.e., team inputs) made some teams more effective than others, whereas today researchers seem more concerned with *why* (i.e., team processes and emergent states) some teams are more effective than others (e.g., Ilgen et al., 2005; Mathieu et al., 2008). However, this shift is not necessarily indicative of a newer, more powerful theoretical lens for viewing teams. Rather, the change in focus is more likely the result of a natural progression within the same theoretical framework (Figure 2.1). Specifically, many, if not most, advancements in the

team research literature have been made using some form of the input-process-outcome (IPO) model originally proposed nearly half a century ago by McGrath (1964) and subsequently advanced by many others (e.g., Cohen & Bailey, 1997; Hackman, 1987; Hackman & Morris, 1975; Ilgen et al., 2005; Marks et al., 2001; McGrath et al., 2000; Salas et al., 1992; Steiner, 1972). Thus, it makes sense that, as a field, researchers would begin by uncovering the possible inputs of team effectiveness before examining the processes of team effectiveness.

Since its inception in 1964, the IPO model has frequently been modified to improve generalizability or address potential shortcomings (e.g., Cohen & Bailey, 1997; Hackman, 1987; Hackman & Morris, 1975; Ilgen et al., 2005; Marks et al., 2001; McGrath et al., 2000; Salas et al., 1992; Steiner, 1972). For example, Cohen and Bailey's (1997) review article identified a set of variables that indirectly influence team processes, such as environmental variables (e.g., turbulence, industry characteristics) and psychological traits (e.g., group norms, shared mental models, group affect). Ultimately, the authors added to the original IPO framework by accommodating more than just the variables found directly in the IPO's causal path.

Similarly, Marks and colleagues (2001) expanded the model to better explain the element of time. Like all models that propose causation, the IPO model has always implied a relation with time (e.g., inputs first drive processes, processes then drive outcomes). However, very few studies explicitly acknowledged that time factors, including project deadlines, time limits, and synchronization schedules, are important influencers to team functioning. To incorporate this acknowledgement, Marks et al.

(2001) posited that teams perform in recurring episodes of goal-directed activity, usually scheduled around easily measured project milestones or periods when goal progress or accomplishment can be assessed. Each episode consists of a transition phase, defined as a period of evaluating and planning for future activities (e.g., team meeting, review session), and an action phase, defined as a period where teams engage in activities directly related to goal accomplishment (Marks et al., 2001). When one episode finishes, another begins, with the team using feedback provided after the previous action phase as a means to evaluate and plan subsequent action phases. Past research that examined time as a factor in team and small group functioning primarily focused on changes in the interaction patterns over the team's lifecycle (e.g., Tuckman, 1965) or changes in the intensity of task-directed behavior in a single task experiment (e.g. Gersick, 1988; 1989). Marks et al.'s (2001) framework is compatible with these perspectives (e.g., Kozlowski et al., 2009), but is distinct in that it was the first model to suggest a recurring episodic pattern of team processing.

In addition to advancing an episodic framework, Marks et al. (2001) also proposed a taxonomy of the specific, narrow processes that teams use to transform inputs into outputs. Historically, team processes were dichotomized into two categories: taskwork and teamwork processes (McIntyre & Salas, 1995; Oser, McCallum, Salas, & Morgan, 1989; Stout, Cannon-Bowers, Salas, & Milanovich, 1999). Task-related processes capture the actions that must be performed by team members to complete the team's task, whereas teamwork processes, also called interpersonal processes, address the actual interactions between team members (McIntyre & Salas, 1995). Consistent

with this historical perspective as well as their episodic framework, Marks and colleagues (2001) argued for two sets of processes directed toward taskwork completion, called transition processes and action processes, and another set of distinct interpersonal processes aimed at facilitating teamwork.

In the temporally-driven episodic framework proposed by Marks et al. (2001), transition processes facilitate taskwork in transition phases, whereas action processes facilitate taskwork in action phases. Interpersonal processes, on the other hand, facilitate teamwork across episodes and remain important during both transition and action phases. Transition processes include interpreting and evaluating the team's mission (mission analysis), identifying and prioritizing goals relevant to mission accomplishment (goal specification), and developing initial and alternate strategic courses for the team (strategy formulation and planning). Action processes include interpreting and tracking the information needed to monitor goal progress (monitoring progress toward goals), tracking resources and environmental factors that may influence goal accomplishment (systems monitoring), assisting team members complete tasks through feedback, coaching, or behavioral action (team monitoring and backup responses), and coordinating the interdependent actions of team members (coordination activities). Interpersonal processes include preemptively and reactively managing the conflicts that arise from taskwork or personal disagreements (conflict management), fostering and maintaining collective motivation and confidence (motivation and confidence building), and regulating member emotions (affect management). Recent meta-analytic results generally supported this model, with results suggesting that the task-related processes

inherent are distinct from interpersonal processes (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008). Given this support, the hypothesized model proposed in later sections relies on the task-related vs. interpersonal process distinction to capture the key mediating variables between team leadership inputs and team outcomes.

In addition to specifying different types of team processes, the authors also incorporated prior work that differentiated between processes and psychological traits (Cohen & Bailey, 1997), arguing that team processes and emergent states should be clearly distinguished from one another. Emergent states, which are described as the motivational and affective states of teams, are distinct from processes in that they do not explicitly address the nature of team member interactions (Marks et al., 2001). Examples of emergent states include team cohesion, collective efficacy, and team potency. Marks et al. (2001) argued that emergent states likely serve as inputs and outputs in the IPO framework, but also acknowledged that they are likely intertwined as predictors of team effectiveness and also may be the outcomes of previous interactions. Indeed, recent work has noted the importance of emergent states as predictors of team effectiveness (DeChurch & Mesmer-Magnus, 2010; LePine et al., 2008; Stajkovic, Lee, & Nyberg, 2009).

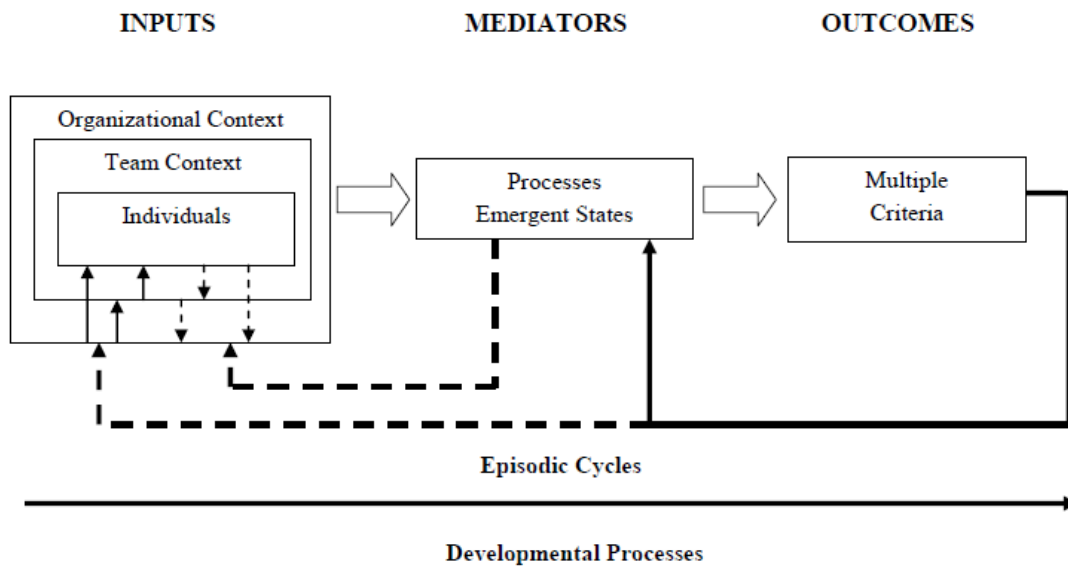


Figure 2.2. Input-mediator-outcome-input (IMOI) framework (adapted from Mathieu et al., 2008)

In addition to emergent states, researchers have begun to identify other variables that are not well captured in the traditional IPO framework. In fact, a recent review of work teams was dedicated almost entirely to identifying the shortcomings of the IPO model in favor of a new, more accurately titled framework referred to as the input-mediator-outcome-input (IMOI) model (Figure 2.2; Ilgen et al., 2005). Despite the new name, however, the IMOI model is unmistakably a successor of the IPO model. Although the IMOI framework acknowledges other non-process variables, including emergent states, as mediators and introduces a potentially useful feedback loop to accommodate dynamic team developments, it also forces researchers to make tradeoffs to ensure parsimony and testability. In other words, it is difficult to test and makes sense of a model with every potential variable included over an entire team lifecycle.

Therefore, in an effort to maximize parsimony and generalizability, I do not attempt to capture the plethora of non-process mediators but instead propose a model in the traditional IPO framework. However, the hypothesized model advanced in later sections is framed in a way to accommodate future additions, including emergent states and other mediating variables.

Having established a foundation for the work team and process model literature, I now direct my focus to an important input variable – team leadership. I begin with a pointed critique of traditional leadership models, being careful to point out potential limitations of each model when viewed in the unique context of work teams. I then introduce and discuss the merits of functional leadership theory as a promising perspective for understanding team leadership, but also note the challenges of empirically testing the theory and using it to make specific prescriptions. These arguments ultimately lead toward a hypothesized model that allows for a potentially clarifying and more prescriptive view of how team leadership can be functional.

2.4 The Critical Role of Team Leadership

As stated in previous sections, teams offer organizations the opportunity for valuable synergistic gains above what can be produced by collections of individuals working more independently. An implicit assumption made when discussing the benefits of organizational work teams, however, is that they are working toward achieving organizational goals. This is not an assumption that should be taken for granted. For example, team-based work arrangements can often create situations in which individual contributions are difficult to monitor, giving self-seeking members an opportunity to

shirk and, hence, diminishing the team's process gains (Alchian & Demsetz, 1972).

Further, there are a number of other complexities beyond self-seeking behavior that pose risk to the benefits of organizational work teams. Hackman (1987) offers a succinct account of these complexities:

...[Work teams] also have a shady side, at least as they typically are designed and managed in contemporary organizations. They can, for example, waste the time and energy of members, rather than use them well. They can enforce norms of low rather than high productivity (Whyte, 1955). They sometimes make notoriously bad decisions (Janis, 1982). Patterns of destructive conflict can arise, both within and between groups (Alderfer, 1977). And groups can exploit, stress, and frustrate their members - sometimes all at the same time (Hackman, 1976).

(315)

In light of these challenges, team leaders are faced with the challenge of both maximizing the synergistic process gains of teams while simultaneously preventing process losses (Hackman, 1987). These realizations have led some researchers to suggest that leadership may have its most dramatic consequences at the team-level rather than the more commonly researched levels of analysis (Lim & Ployhart, 2004). Given these views, it is not surprising that team leadership has drawn a great deal of recent attention from organizational researchers (e.g., Morgeson et al., 2010; Zaccaro et al., 2009).

Past research has shown that leaders can influence team performance in a number of specific ways. For example, leaders are often instrumental in defining team goals and structuring the team to accomplish organizational objectives (Zaccaro et al., 2001),

fostering individual-level and team-level empowerment (Chen, Kirkman, Kanfer, Allen, & Rosen, 2007), coaching members to be self-managing units (Manz & Sims, 1987), and managing team boundaries (Druskat & Wheeler, 2003). Moreover, existing research also highlights the dynamic impact of leadership over a team's lifecycle. For instance, leaders facilitate learning and adaptation by creating an environment of psychological safety (Edmondson, 1999), actively engaging in the team development stages (Kozlowski, Gully, McHugh, Salas, & Cannon-Bowers, 1996), leveraging contingencies to build capabilities (Kozlowski et al., 2009), and preparing the team in advance of problems (Morgeson, 2005). Finally, past work has also been clear in recognizing that leadership influences both team processes and emergent states (Zaccaro et al., 2001).

The multitude of significant findings between leadership and important team outcomes has led some researchers to speculate that the team leadership literature is on the threshold of major conceptual breakthroughs (Day, Gronn, & Salas, 2006). Conversely, other researchers have noted that, in contrast to the overwhelming amount of research being conducted on teams in general, the topic of team leadership has been relatively neglected (Salas et al., 2004). Thus, recent reviews have concluded that a thorough and generalizable understanding of team leadership has yet to be fully realized, leaving researchers in search of a powerful framework for examining team leadership (Morgeson et al., 2010; Zaccaro et al., 2009). This conclusion is likely a natural bi-product of the vast complexities and challenges inherent to organizational work teams (Mathieu et al., 2008) as well as a reliance on traditional dyadic leadership models (Burke et al., 2006; Morgeson et al., 2010; Zaccaro et al., 2009).

Consistent with Zaccaro and colleagues' (2009) review, a critical distinction needs to be made between two common types of leadership models: leader-centric and team-centric models. Leader-centric models, otherwise referred to as traditional (Day et al., 2004), hierarchical (Jaques, 1990), or vertical models (Conger & Pearce, 2003; Pearce & Sims, 2002), focus on individual leaders and the processes they use to influence team effectiveness (Zaccaro et al., 2009). Leader-centric models view leadership as an input in the IPO framework (Day et al., 2004). On the other hand, commonly used team-centric perspectives including shared leadership (Pearce & Conger, 2003) suggest that the direction and management of teams is not controlled by a single individual. Rather, team members self-manage group functioning (Manz & Sims, 1987), spreading the leadership responsibilities across members (Pearce & Conger, 2003) or allowing leadership duties to emerge as leaders (Gibb, 1947; 1954).

Although these different views are often presented as competing with each other (Zaccaro et al., 2009), several researchers have acknowledged that they are not substitutes, and a formal leader is still important for directing and managing the supposed self-managing team (Cox, Pearce, & Perry, 2003). Similarly, recent team leadership models have proposed that an external leader is likely a requisite for team self-management (Morgeson et al., 2010). Thus, the following sections primarily examine leadership from a leader-centric perspective, although many of the tenets discussed can be translated to a shared leadership perspective. Similarly, the theoretical model presented in later sections presupposes a formal team leader.

2.4.1 Applying Dyadic Models to Teams

Recent literature reviews have noted that many researchers have attempted to apply traditional dyadic theories, including the path-goal theory of leadership (House, 1971), leader-member exchange theory (LMX; Dansereau, Cashman, & Graen, 1973; Graen & Cashman, 1975; Graen, 1976), and the transformational and charismatic leadership theories (Bass, 1985; Conger & Kanungo, 1987), to the team context (Burke et al., 2006; Morgeson et al., 2010; Zaccaro et al., 2001). Given that teams operate differently than individually-based work, this has likely provided an incomplete view of how leadership operates at the team-level (Burke et al., 2006; Kozlowski & Bell, 2003; Morgeson et al., 2010; Salas et al., 2004). A potential explanation is that dyadic perspectives are better suited to predict individual outcomes (i.e., individual performance) in independent situations, but struggle to predict collective outcomes (i.e., team performance), which are influenced by more complex team processes, in interdependent situations (Burke et al., 2006; Kozlowski & Ilgen, 2006; Morgeson et al., 2010; Zaccaro et al., 2001). Further, traditional dyadic perspectives have often focused on a narrow set of leader behaviors, essentially arguing for a one-size fits all approach to leadership (Morgeson et al., 2010). Thus, a potential flaw in translating dyadic theories of leadership to the team context is that they do not distinguish between one-on-one leader-member interactions and collective leader-team interactions (Morgeson et al., 2010; Zaccaro et al., 2009), nor do they allow for behavioral discretion across different situations (Zaccaro et al., 2001; 2009). As such, important correlates to team

effectiveness, such as those that enable team processes, are left inadequately addressed (Burke et al., 2006).

The primary explanation for the shortcomings of dyadic models at the team level is that they fail to address the unique complexities associated with teams (Kozlowski & Bell, 2003; Kozlowski et al., 2009; Salas et al., 2004; Zaccaro et al., 2001; 2009).

Reviews on team leadership, for instance, have noted that traditional dyadic theories focus more on influencing collections of individuals rather than developing, maintaining, and promoting the interactions *between* team members that lead to important team processes (Zaccaro et al., 2001). Further, dyadic theories do not distinguish between different types of interactions, such as leader-member and leader-team interactions (Morgeson et al., 2010; Zaccaro et al., 2009). Although some researchers have provided preliminary models for understanding how different types of interactions operate jointly in teams (e.g., Chen et al., 2007; Kirkman & Rosen, 1999; Hirschhorn, 1991; Wu et al., 2010), these works remain relatively scarce.

These criticisms are not meant to imply that the tenets of dyadic models have no value in team research, nor is it meant to argue that individuals are simple creatures void of their own complexities. On the contrary, it highlights that dyadic leadership models were not designed to explain team interactions in highly interdependent work arrangements, and that a collection of unique and complex individuals is a more complex unit of analysis than one individual in isolation. However, some aspects of dyadic models may indeed be informative in the team context, especially when considering the dynamic nature of teams and their tasks. For instance, as teams develop

and experience performance episodes aimed at completing differing tasks, important factors like task interdependence may increase or decrease over time (Wageman & Gordon, 2005), shifting the importance to and from individual-focused and team-focused properties (Kozlowski et al., 2009). Thus, in periods where task interdependence is low and work arrangements become more suited for individual-work, dyadic principles may offer more valuable insight. A more detailed discussion of how task interdependence influences work arrangements is included in subsequent sections. Specific examples of commonly used dyadic approaches are provided below.

The path-goal theory of leader effectiveness posits that a leader is responsible for creating expectancies and valences for individuals (House, 1971; House & Mitchell, 1974). In this theory, leaders must fulfill two conditions. First, they must define a path for followers to achieve their goals. In order to be effective, however, the path must foster the followers' expectancy of goal accomplishment, such that they believe following the path will lead to success. Second, leaders must set goals that are valuable to followers. In doing so, it was argued that leaders would be effective because they provided direction (i.e., the path), goals, and the motivational elements (i.e., expectancy and valence) necessary for follower to enact proper behaviors.

Although path-goal theory is clearly directed at individual-level variables, House (1971) originally hypothesized, and found support for, team-related outcomes. For example, he found that specific leader behaviors, namely those that initiated structure, reduced role ambiguity and clarified roles for individuals in team settings (House, 1971). However, this early work did not provide a direct empirical test for leadership behaviors

that enable team processes. Further, House's (1971) hypotheses also suggested that leader behaviors directed toward initiating structure may be most useful when groups are early in their developmental stages and social norms have not yet been formed. Thus, in addition to being limited by a focus on individual rather than team processes, path-goal theory may also be constrained to early team development stages. House (1996) later revised path-goal theory to better describe team leadership, but the theory is still largely considered a dyadic, individual-focused model (Zaccaro et al., 2001; 2009). Nonetheless, the overarching principles of path-goal theory may offer some insight into what leaders can do when tasks are low in interdependence or when teams are in the early stages of development. Further, the communication of specific goals at the team-level remains an important function of team leadership (Morgeson et al., 2010).

Leader-member exchange theory (LMX; Dansereau et al., 1973; Graen & Cashman, 1975; Graen, 1976), which was originally termed the vertical dyad linkage model, originated as an alternative to views that assumed leaders treated all of their followers using a similar style (Graen & Uhl-Bien, 1995). In contrast to these views, LMX argues that leaders differentiate their treatment of followers based on a myriad of factors, including follower competence or interpersonal compatibility (Dansereau et al., 1975; Graen & Uhl-Bien, 1995; Hooper & Martin, 2008; Sparrowe & Liden, 1997). Thus, a highly competent follower may enjoy a high-quality relationship with the leader, whereas a less competent coworker may have to endure a low-quality relationship. Past work has highlighted significant relationships between relationship quality and important job criteria, such as job performance (Liden, Wayne, & Stilwell, 1993; Graen, Novak, &

Sommerkamp, 1982; Vecchio & Gobdel, 1984), organizational commitment (Nystrom, 1990), organizational citizenship behaviors (OCB) (Ilies, Nahrgang, & Morgeson, 2007), and job satisfaction (Graen et al., 1982; Duchon, Green, & Taber, 1986). These relationships were later confirmed using meta-analytic techniques (Gerstner & Day, 1997; Ilies et al., 2007).

Although often conceptualized as a dyadic, individual-level construct, the theoretical tenets of LMX place an important emphasis on the differences in relationship quality within a group context. Thus, LMX is not necessarily a pure dyadic construct, but also can be informative for group-level variables (Schriesheim, Castro, & Yammarino, 2000). However, most empirical tests of LMX theory have been limited to the examination of individual-level LMX perceptions and individual-level outcomes (Cogliser & Schriesheim, 2000; Goodwin, Bowler, & Whittington, 2009; Henderson, Liden, Glibkowski, & Chaudhry, 2009), resulting in an incomplete account of how LMX differences across group members influence team-level outcomes (Henderson et al., 2009).

Similar to path-goal theory, LMX theory likely has at least some degree of value in team research. For instance, the knowledge gleaned from past work examining individual-level relationships may be applicable to teams performing a task low in interdependence. Additionally, different LMX relationships in a group will likely influence each individual member's value of their own LMX relationships through social comparison processes. Ultimately, this may affect member attitudes and behaviors (Hogg, Abrams, Otten, & Hinkle, 2004; Suls & Wheeler, 2000). Recent empirical work

has begun to examine the complex relationships between individual LMX, group average LMX, and the variance of LMX in a group (Li, Kirkman, & Harris, 2011). Despite these advances, however, questions remain about the utility of LMX at the team-level. For instance, given the dynamic nature of teams, it might not be possible for leaders to make meaningful or worthwhile changes in their treatment of individuals across different task types. Leaders attempting to make frequent changes in their relationship quality may risk being seen as erratic, inconsistent, and unreliable by team members.

A final traditional leadership theory that has been frequently applied to the team context is transformational leadership theory (Bass, 1985; Bennis & Nanus, 1985; Burns, 1978; Sashkin, 1988; Tichy & Devanna, 1986). Transformational leaders engage in inspirational behaviors that move individual followers beyond self-interest and perceptions of their own limitations to fervently pursue collective goals (Bass, Avolio, Jung, & Berson, 2003). This theory is different from path-goal theory and leader-member exchange in that it does not rely on rational processes to explain leadership's influence on followers, but rather argues that changes in followers' emotions and values drive effectiveness (Yukl, 1999). Judge and Piccolo (2004) meta-analyzed 87 empirical studies and found transformational leadership to be significantly positively related to multiple criteria, especially follower satisfaction metrics. Although transformational leadership and performance criteria were not strongly correlated, several researchers have noted that transformational leadership may have indirect mediated effects on individual, team, and organizational performance (Conger, 1999; Dionne, Yammarino,

Spangler, Atwater, & Spangler, 2004; Judge & Piccolo, 2004; Schaubroeck, Lam, & Cha, 2007).

Seminal works conceptualized four dimensions of transformational leadership: Idealized influence (e.g., charisma), inspirational motivation, individualized consideration, and intellectual stimulation (Bass, 1985). *Idealized influence* behaviors, or charismatic behaviors, convey the “leaders’ values and beliefs, their sense of mission and purpose, and their ethical and moral orientation” (Antonakis & House, 2002; 9). Idealized influence is commonly assessed using two distinct factors, one measuring the degree that followers perceive their leader is charismatic (e.g., social charisma) and the second aimed at measuring the degree to which the leader actually enacts charismatic behaviors (i.e., MLQ Form 5X; Avolio, Bass, & Jung, 1995; 1999; Bass & Avolio, 1997). Because the hypothesized model presented later centers around functional leader behaviors, the present discussion focuses only on the behavioral dimension of idealized influence. A second dimension of transformational leadership, *inspirational motivation*, captures how “leaders energize their followers by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicating to followers that the vision is achievable” (Antonakis, Avolio, & Sivasubramaniam, 2003: 264-265). Next, *individualized consideration* behaviors contribute “to follower satisfaction by advising, supporting, and paying attention to the individual needs of followers, and thus allowing them to develop and self-actualize” (Antonakis et al., 2003: 265). The final dimension of transformational leadership, *intellectual stimulation*, represents leader behaviors that “appeal to followers’ sense of logic and analysis by

challenging followers to think creatively and find solutions to difficult problems” (Antonakis et al., 2003: 265).

Recent research has noted that the different dimensions of transformational leadership may be particularly useful for understanding how team leaders influence both individual team members as well as collective groups (Wu et al., 2010). In particular, Wu and colleagues (2010) argued that the idealized influence and inspirational motivation dimensions capture group-focused behaviors and influence group effectiveness through group identification and collective efficacy. The individualized consideration and intellectual stimulation dimensions, on the other hand, capture individual-focused leader behaviors and influence group effectiveness through similarities or divergences in leader identification and self-efficacy across team members (Wu et al., 2010). Although the authors found that group-focused and individual-focused behaviors influence different mediating mechanisms in the leader behavior – group effectiveness relationship, they also noted that leaders may not be able to simultaneously rely on individual-focused and group-focused behaviors to improve effectiveness. That is, individual-focused leadership may compromise group-focused leadership. This finding was counterintuitive to previous logic that suggested leaders must address both team and individual needs (Hirschhorn, 1991).

Despite the potential tradeoffs of using individual-focused and group-focused leadership simultaneously, Wu et al.’s (2010) findings supported previous arguments that group-focused leadership is an important correlate to team effectiveness (e.g., Burke et al., 2006; Kark, Shamir, & Chen, 2003). This conclusion is in line with previous

empirical work. In fact, recent research on transformational leadership in the team context has yielded a number of intriguing results, especially in regards to affective and cognitive variables. For instance, Arnold, Barling, and Kelloway (2001) found that transformational leadership in teams encourages the development of trust, commitment, and team efficacy better than competing theoretical perspectives. Similarly, Kirkman, Chen, Farh, Chen, and Lowe (2009) produced findings in support of a transformational leadership – procedural justice relationship. In addition to these results, researchers have also drawn links from transformational leadership to team performance outcomes. For example, Keller (2006) showed transformational leadership to be a predictor of project team success over different time horizons; whereas Schaubroeck and colleagues (2007) found that transformational leadership has an indirect effect on team performance by way of increasing group potency across different cultures.

In total, it is hard to ignore the impressive findings of transformational leadership in team research. Recent work, however, has criticized the theory for lacking the specificity to explain *why* and *how* it influences team processes (Kozlowski et al., 2009). That is, transformational leadership endorses a universalistic approach, suggesting that certain leadership behaviors should remain static over the course of a team's lifecycle, regardless of important contingencies (Kozlowski et al., 2009). Additionally, several other conceptual weaknesses of transformational leadership theory may be magnified in the team context. For example, Yukl (1999) argued that leaders relying on charisma to inspire followers may be dysfunctional in some team settings, and goes on to add that functional leadership has a “narrow focus on dyadic processes, omission of some

relevant behaviors, insufficient specification of limiting conditions (situational variables), and a bias toward heroic conceptions of leadership” (286).

When weighing the benefits and weaknesses of the transformational perspective, it is not clear whether these criticisms are warranted. It may be the case that leaders should, in fact, constantly strive to motivate their team members beyond self-interest. Further, recent findings that show mediating links between transformational leadership behaviors and team performance have begun to offer clarity as to *how* and *why* transformational leadership actually works (e.g., Kirkman et al., 2009; Schaubroeck et al., 2007; Wu et al., 2010). However, if leadership is to be understood within the IPO models of team leadership, it becomes necessary to understand how transformational leadership influences the specific processes that mediate the input-outcome relationship. Nonetheless, newer models of team leadership are compatible with the tenets of the transformational leadership perspective (e.g., Kozlowski et al., 2009; Morgeson et al., 2010), suggesting that transformational leadership will likely remain an important component of future team leadership models.

2.4.2 A Functional Approach to Team Leadership

The aforementioned models have largely been criticized in team settings for focusing on a relatively narrow set of behaviors, concentrating on primarily dyadic interactions, lacking the flexibility to accommodate the dynamic and complex nature of teams, and falling short of specifically explaining team processes (e.g., Burke et al., 2006; Kozlowski et al., 2009; Morgeson et al., 2010; Yukl, 1999; Zaccaro et al., 2001; 2009). These shortcomings have inspired a number of team researchers to explore

leadership using a different theoretical lens - functional leadership theory (e.g., Burke et al., 2006; Hackman & Walton, 1986; McGrath, 1962; Kozlowski et al., 2009; Morgeson et al., 2010; Zaccaro et al., 2001). Functional leadership theory takes a needs-based approach to understanding leader effectiveness, arguing that an effective leader will “do, or get done, whatever is not being adequately handled for group needs” (McGrath, 1962; 5). Because functional leadership theory employs a needs-based approach to leadership, it is not limited by a single focus on leader-member interactions or leader-team interactions. Rather, functional leadership theory allows leaders to shift the focus from individuals to the team, and anything in between, without compromising the theory’s “leader as completer” (Schutz, 1961: 61) crux. Moreover, functional leadership theory does not rely on a specific set of behaviors, but instead endorses a flexible and discretionary approach to team leadership. Theoretically speaking, these two characteristics make functional leadership theory an ideal perspective for overcoming the limitations endemic to other approaches and simplifying many of the complexities inherent in organizational work teams.

In contrast to other leadership theories, functional leadership theory embraces leader discretion and choice in how team needs are met, and thus is not limited to a specific set of behaviors (Morgeson et al., 2010; Zaccaro et al., 2001; 2009). Further, the scope of needs that leaders must meet is unlimited, which permits leadership researchers to more fully incorporate the boundary management roles of leaders into more comprehensive models (Katz & Kahn, 1978; Zaccaro et al., 2001). Also, the functional approach is well suited to handle dynamic, time-related complexities. Finally, the theory

also does not distinguish between, nor is constrained by, specific types of leader interactions (i.e., leader-member, leader-team; Morgeson et al., 2010).

The benefits listed above make a convincing argument for the adoption of functional leadership theory in the team domain. In total, the theory proposes an incredibly simple and straightforward approach to understanding even the most complex issues related to team leadership: effective team leaders meet any and all needs whenever they are needed. However, the functional perspective is not without criticisms. One such criticism is that it proposes a near-tautological relationship. Zaccaro and colleagues (2001) noted this issue, stating that the definition of functional leadership theory creates a situation in which “if the group is successful, then the leader can be defined as effective. Or, any action by the leader is effective is the group succeeds” (454). In other words, functional leadership has a “nonoperational” definition and proposes hypotheses that cannot be rejected (Lord, 1977: 115).

In addition to conceptual criticisms of functional leadership, there are also related practical downsides. In particular, the overarching principles of functional leadership theory may be too general to offer meaningful prescriptions to leaders and, similarly, propose a difficult model to empirically test. Just as there were criticisms of other traditional models for featuring narrow sets of behaviors and having a primarily dyadic focus, the functional approach lacks the specificity to make meaningful prescriptive recommendations regarding how leaders anticipate, identify, and meet team needs. In other words, the functional leadership perspective, at its highest level, may not actually be functional.

This raises an interesting question for team leadership researchers that are trying to embrace the complexities of teams. Should researchers embrace complexity by continuing to examine exhaustive and potentially unwieldy lists of specific leadership behaviors or, conversely, should they adopt models that trade specificity for broad theory? This question has not gone unnoticed by researchers. In fact, Burke et al. (2006: 303) concluded their recent meta-analysis of functional leadership behaviors with an acknowledgement that their work was only a “prelude to a much broader research agenda, as additional investigation is needed to illuminate *why* leadership in teams matters and under *what* conditions (italics added)”. A review of recent advances in functional leadership theory is provided below.

2.4.3 Clarifying Functional Leadership Theory

To date, there have been at least three prominent advancements that have added clarity to the functional perspective. First, researchers have begun to clarify what behaviors are functional (e.g., Burke et al., 2006; Morgeson et al., 2010). This advancement allows for functional leadership theory to have more prescriptive power. Second, recent work is now providing a more distinctive look into how leader functions map onto commonly used team process models (e.g., Burke et al., 2006; Hackman, 2002; Kozlowski et al., 2009; Morgeson et al., 2010; Zaccaro et al., 2001). In doing so, questions are being addressed as to why certain functions improve team effectiveness. Finally, important contingencies, such as task interdependence, are being acknowledged as likely predictors of team needs (e.g., Burke et al., 2006; Kozlowski et al., 2009; Morgeson et al., 2010). Such an approach is not surprising given that past leadership has

supported, at least to some degree, utility in examining situational contingencies (e.g., Fiedler, 1964; Hersey & Blanchard, 1969). As Conger (2004: 138) states, “We have been losing an appreciation for the fact that leadership approaches do indeed depend upon the situation,” and we need to “develop accurate contingency models of leadership.” The addition of situational contingencies to the functional approach is particularly promising as it addresses the prescriptive deficiencies of previous functional models by providing insight into when certain functions and, by extension, their corresponding behaviors are most important. Recent examples of advancements in functional leadership theory are provided below.

Burke and colleagues (2006) reviewed and meta-analytically examined 50 empirical studies, finding different relationships between specific behaviors and team outcomes. Following an established classification (Fleishman et al., 1991), the authors grouped leader behaviors into person-focused behaviors and task-focused behaviors. Theoretically, Burke and colleagues (2006) integrated a functional model (Fleishman et al., 1991) with a process model (Hackman, 2002), arguing that person-focused and task-focused behaviors uniquely contribute to team effectiveness by influencing different processes. Indeed, results of their meta-analysis confirmed that person-focused and task-focused behaviors each explained significant variance in team performance outcomes. Further, in an attempt to answer previous calls (Salas et al., 1992), the authors also examined task interdependence as a potentially important contingency variable in team leadership models. Unfortunately, a lack of studies at the lower-levels of interdependence prevented definitive conclusions. Nonetheless, their preliminary results

did suggest that interdependence may be a critical contingency for team leadership researchers to consider.

In comparison to the Burke et al. (2006) meta-analysis, Kozlowski and colleagues (2009) took a different approach to clarifying functional leadership theory. Although the authors acknowledged the utility in examining specific behaviors, they were more concerned with identifying the dynamic properties of teams that influence leader functions. In particular, they noted the following limitation with previous functional approaches:

“The leadership functions are intended to be applied flexibly to enable group maintenance, development, and effectiveness, but the theories do not address the specifics of when and why particular functions should be applied. In other words, dynamic contingencies that should influence the application of leadership functions and their foci are not specified” (Kozlowski et al., 2009: 116).

Building from earlier work on team development and processes (Gersick, 1988; 1989; Kozlowski, Gully, Nason, & Smith, 1999; Marks et al., 2001; Tuckman, 1965), the authors argue that leadership functions differ in importance across transition and action-like phases as well as developmental stages.

Although informative, the model proposed by Kozlowski and colleagues (2009) has yet to be empirically tested, meaning that definitive conclusions regarding its actual utility cannot yet be made. Nonetheless, many of the tenets and overarching ideas are based in previously confirmed theories. Accordingly, Kozlowski et al.’s (2009) meta-theory of dynamic team leadership provides insight beyond previous approaches, namely

illustrating that leaders must do more than simply meet functional needs inherent to a current task, but must instead take a more forward-looking approach. For instance, leaders must evaluate a team's developmental stage and episodic phase to identify what needs should be met to accomplish the task at hand, but must also leverage the team's current situation to build skills necessary for future performance episodes (Kozlowski et al., 2009).

Building from their earlier work (e.g., Kozlowski et al., 1999), the more recent theory of team leadership proposed by Kozlowski and colleagues (2009) also provides an informative discussion of task contingencies likely to influence leadership functions. For example, task interdependence is related to team workflow arrangements, which in turn have implications for member coordination and interaction patterns (Bell & Kozlowski, 2002; Kozlowski et al., 1999). In a dynamic setting, task interdependence and workflow arrangements likely vary across performance episodes. Increases in task interdependence, along with changes in a team's developmental stage, led the authors to argue that leaders will need to shift their focus from the individual-level to the team-level over time (Kozlowski et al., 2009; Weaver, Bowers, Salas, & Cannon-Bowers, 1995).

Interestingly, the model suggests that more interdependent workflow arrangements will unfold over time, presumably because the team cannot handle highly interdependent workflow arrangements in its early development. While this natural progression from high to low interdependence makes sense, it does not necessarily reflect reality. First, highly interdependent workflow arrangements may not be ideal in

all situations. For example, a commonly used project lifecycle model (Royce, 1970) suggests that project teams move across a number of different stages over their lifecycle, such that in one stage they are focused on intensive collaboration for novel idea generation, but in a later stage they may be faced with specialized maintenance tasks that are best-suited for one or two subject matter experts rather than the entire team. Second, as Kozlowski et al. (2009) acknowledge, actual team development may not occur in a linear fashion. Team member turnover, changing task characteristics, and other factors may invalidate the model's proposed progression. Thus, although the model is certainly one of the most informative for understanding dynamic team complexities, namely task interdependence, it may be unnecessarily constrained by its reliance on developmental assumptions. Nonetheless, the model proposed in later sections acknowledges that task interdependence may not be constant across or within teams and embraces task interdependence as a key situational contingency.

A more recent model of team leadership proposed by Morgeson and colleagues (2010) provides the most complete clarification of the functional perspective to date. To address shortcomings of the behaviorally-based dyadic approaches and the limitations of the broad functional approach, the authors sought to create a taxonomy of specific leadership behaviors that are functional in teams. Moreover, the authors aligned their taxonomy of functions within the temporally-based framework of teamwork processes (Marks et al., 2001).

In creating their taxonomy, Morgeson et al. (2010) started with a list of 517 specific leadership behaviors that have been examined in previous research. Next, the

authors grouped the behaviors into broad functional categories, distinguishing between transition and action functions. Ultimately, the authors arrived at 15 distinct leadership functions and provided examples of the behaviors leaders can use to fulfill these functions. Transition functions included composing the team, defining the mission, establishing expectations and goals, structuring and planning, training and development, sense making, and providing feedback. Action functions include monitoring the team, managing team boundaries, challenging the team, performing team tasks, solving problems, providing resources, encouraging team self-management, and supporting the social climate.

Although the authors did not propose direct links between leader behaviors and specific team processes, many of the functional behaviors they developed do appear to align with the narrow processes outlined by Marks et al. (2001). For example, transition functions such as “defining the mission” and “establishing expectations and goals” seem particularly well-equipped to facilitate “mission analysis” and “goal specification” processes, respectively. Similarly, action functions like “performing team tasks” might facilitate the process of “backup behavior”, whereas the “managing team boundaries” function likely enables the “systems monitoring” process. However, other links are not so clear. For instance, the leader functions of “monitoring the team” and “sense making” may facilitate any number of the processes outlined by Marks et al. (2001).

The authors did not specify interpersonal functions, but this is likely because interpersonal needs are present over the entire course of team performance episodes, not in easily defined segments (Marks et al., 2001). Therefore, because interpersonal

processes operate simultaneously with transition and action processes (Marks et al., 2001), interpersonal functions may be represented elsewhere in the current taxonomy. For example, the “supporting social climate” function may be especially useful for enabling the “affect management” processes described by Marks et al. (2001). In total, Morgeson et al.’s (2010) taxonomy provides the literature with a much needed understanding of what leaders should do to be functional (i.e., the specific behaviors) and when leaders need to do it (i.e., in transition vs. action phases). Additionally, the authors provided an introductory step for exploring what types of leader behaviors enable specific processes. A complete listing of these functions, paired with sample behaviors that underlie them as well as relevant research findings, is provided in Appendix A.

Interestingly, Morgeson et al. (2010) also attempted to address the criticisms pervasive in traditional leadership theories that do not distinguish between leader-member and leader-team interactions. Like other researchers (e.g., Zaccaro et al., 2009), the authors suggested that leadership should primarily be directed toward leader-team interactions since most team needs are likely to arise from complex team processes, not individual-level phenomenon. This, however, is an unnecessary and potentially constraining distinction. As suggested by Kozlowski et al. (2009), teams are dynamic and complex units that undergo changing task characteristics. Thus, as suggested in the previous critique of traditional dyadic models, leaders may have to employ a mix of leader-member and leader-team interactions in different settings to achieve optimal team functionality.

Although Morgeson et al. (2010) did not explicitly address contingency variables in their taxonomy, they did encourage future researchers to explore a number of factors that may influence the importance of specific functions. Different work designs, for instance, may affect the importance of monitoring the team and establishing expectations (Morgeson et al., 2010). Thus, in addition to clarifying what makes leaders functional, Morgeson and colleagues (2010) added to the recent calls to examine the role of situation contingencies in team leadership models (e.g., Burke et al., 2006; Conger, 2004; Kozlowski et al., 2009).

Despite each of the advancements described in this section, much remains unknown regarding what makes leadership functional in teams. Moreover, much of the work described above has been theoretical in nature and has yet to be empirically examined (e.g., Kozlowski et al., 2009; Morgeson et al., 2010). Thus, key challenges remain regarding whether functional leadership theory can achieve its full potential. Researchers must find a way to align two previously competing objectives: Embracing the parsimony and explanatory power of functional leadership theory while simultaneously increasing its specificity and prescriptive power. In the following sections I attempt to address this challenge by hypothesizing an empirically testable framework for understanding team leadership from a functional perspective. In doing so, I answer calls to integrate the mediating mechanisms and contingencies that influence team leadership effectiveness (Burke et al., 2006).

2.5 The Role of Leader Focus

I posited above that the needs-based approach argued in functional leadership theory is useful in explaining how leadership is functional beyond dyadic interactions and behavioral approaches. However, I also noted that functional leadership theory is limited in its description of the specific ways that leaders meet those needs. That is, whereas traditional approaches can be criticized for being too specific to address the vast complexities of teams, the functional approach can be criticized for being too broad to offer any specific prescriptions for team leadership. Thus, a proper balance between high-level ideals and meaningful specifics is needed.

In its most general form, functional leadership theory does not specify what types of needs should be met, when they should be met, or how they should be met. Thus, hypothetical reasoning suggests that effective leaders are simply those who focus on all possible needs at all times. This, however, is an unlikely, and perhaps even impossible, explanation for effective team leadership – especially considering all of the complexities inherent to teams. Supporting this argument, previous research offers the possibility that leaders attempting to simultaneously address multiple foci, such as meeting individual and group needs, may actually compromise team effectiveness (e.g., Kirkman & Rosen, 1999; Wu et al., 2010).

This view is consistent with Kanfer and Ackerman's (1989) resource allocation model, which states that individuals cannot devote large amounts of cognitive resources to multiple targets without sacrificing the resources necessary for self-regulation. Viewed in the context of team leadership, this suggests that leaders may not be able to

do *everything* well all the time, but they can do *something* well all the time. Thus, rather than focusing on all possible team needs at all times, a more likely explanation for effective team leadership is that effective leaders focus accurately on the most pressing team needs at varying times during the team's lifecycle. Below I describe two dimensions of leader focus that theoretically address the types of needs leaders must meet to foster team effectiveness: person-task focus and entity focus. By embracing the different dimensions of leader focus, it becomes possible to merge the utility of specific behavioral approaches with the high-level needs-based approach of functional leadership theory.

2.5.1 Person-Task Focus

As discussed above, a distinguishing characteristic of the model proposed herein is the multi-foci view of leadership. In particular, I argue that six unique categories of leader focus, which are derived by combining two facets of person-task focus with three facets of entity focus, provide the clarity needed to offer specific predictions and an empirical test of functional leadership theory. The first aspect of leader focus, referred to as person-task focus, has roots in both classic and contemporary works and argues that leader behaviors can be classified as those that deal with taskwork (i.e., task-focused) and those that deal with teamwork (i.e., person-focused; e.g., Burke et al., 2006; Fleishman et al., 1991; Salas et al., 1992; Stogdill, 1950).

Following Burke et al.'s (2006) recent meta-analysis, task-focused leadership is represented by transactional, boundary spanning, and initiating structure behaviors. Transactional leadership behaviors place emphasis on rewards and other exchanges as

consequences to task accomplishment (Burns, 1978). Boundary spanning refers to “actions to establish linkages and manage interactions with parties in the external environment” (Marrone, 2010: 914) and enables task accomplishment through the provision of increased resources and information (Ancona & Caldwell, 1990; 1992; Brown & Eisenhardt, 1995; Hirst & Mann, 2004; Marrone, 2010). Finally, initiating structure behaviors facilitate task accomplishment by reducing role ambiguity and conflict (Burke et al., 2006).

Person-focused leadership is represented in transformational, motivational, empowering, and consideration behaviors. As described in detail in previous sections, transformational leadership is concerned with meaningful, creative, and inspirational exchanges that move individuals away from self-interest and toward a collective vision (Bass, 1985; Bass et al., 2003). Motivational behaviors are those that encourage team members to sustain effort in both positive and trying times (Burke et al., 2006). Empowering leader behaviors are focused toward developing individuals’ self-management skills (Pearce, Sims, Cox, Ball, Schnell, Smith, & Trevino, 2003). Finally, consideration behaviors are concerned with “maintaining close social relationships and group cohesion” (Burke et al., 2006: 293).

2.5.2 Entity Focus

Separate from person-task focus, entity focus is introduced here as a way to account for how team leaders meet different relationship-based, or interactional, team needs. Entity focus is formally defined as the central relationship to which a leader concentrates his or her efforts. To be clear, entity focus represents a directional

component of leadership and not necessarily a quality construct. In other words, an entity focus on individuals posits that a leader directs efforts toward his or her dyadic relationships with team members and is not necessarily indicative of LMX-type measurements of relationship quality.

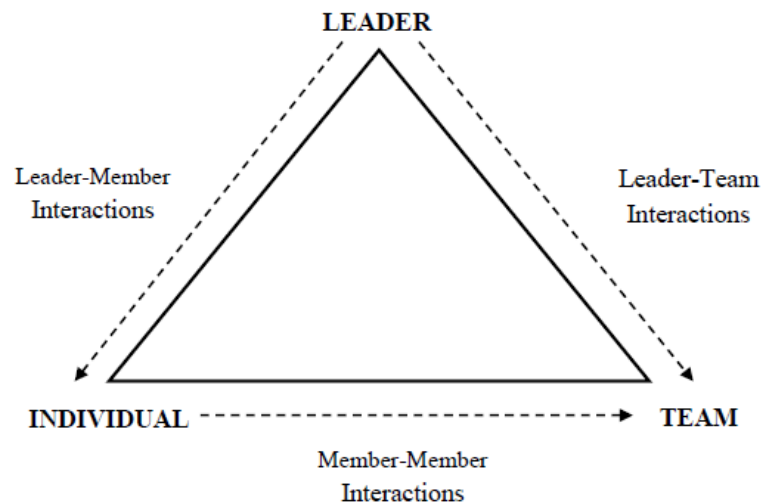


Figure 2.3. Triangle of team relationships (adapted from Hirschhorn, 1991)

The entity focus construct is derived from the work of Hirschhorn (1991), who argued that leaders must understand and accommodate the social-psychological aspects of work teams to achieve optimal leader effectiveness. Specifically, he posited that effective team leaders must attend to three sets of needs at all times: group needs, individual needs, and the needs incurred in different relationships within the team. Hirschhorn (1991) argued that leaders could best attend to these distinct sets of needs by focusing on a triangle of relationships nested within teams (see Figure 2.3). Consistent

with these arguments, I posit that three different entities make up the entity focus construct: individuals within the team (leader-member interactions), the team as a whole (leader-team interactions), and subgroups within the teams (a hybrid interaction between the leader and smaller subsets of team members).

Although intuitive, Hirschhorn's arguments have been largely overlooked by team researchers (see Wu et al., 2010 for an exception). However, recent work has argued that clear distinctions must be made between the different types of interactions in teams to fully understand team leadership (Morgeson et al., 2010; Wu et al., 2010; Zaccaro et al., 2009). For example, in Morgeson et al.'s recent taxonomy of leadership functions (2010), the authors sought to move beyond the dyadic interactions of traditional models by instead focusing solely on collective leader-team interactions. Although likely an improvement over traditional dyadic models, this approach may unnecessarily ignore the possible benefits of traditional dyadic approaches discussed in earlier sections. Rather, a more appropriate perspective may be that employed by Wu and colleagues (2010). In their recent examination of transformational leadership at the group level, the authors embraced Hirschhorn's (1991) view and simultaneously examined both individual and group-focused leadership. The authors concluded that individual-focused and group-focused behaviors likely influence team effectiveness through different mechanisms, which provides support for the notion that different interaction types should be accounted for when examining team leadership.

To address this issue, the present model does not specify that leadership must maintain a static focus on leader-member, leader-team interactions, or leader-subgroup

interactions, but instead builds on prior work that suggests leaders should shift their focus across entities to meet needs in different circumstances (e.g., Hirshhorn, 1991; Kozlowski et al., 2009; Wu et al., 2010). The idea that a team leader may need to shift his or her focus across different relationships is not new (e.g., Hirschhorn, 1991; Janz, Colquitt, & Noe, 1997; Kozlowski et al., 1999; 2009). For instance, Kozlowski and colleagues (2009) advanced a theory of dynamic team leadership, which argued that transformational leadership dimensions, or attempts to move members beyond self-interest towards a collective group interest (Bass, 1990), may not be appropriate in all circumstances. Kozlowski et al. (2009) also noted that when goals shift from individual goals to team goals, leaders may need to change their behaviors. Similarly, Chen et al. (2007) found that leaders who maintained higher quality relationships with their members (high LMX) fostered greater individual performance through individual empowerment, while leaders that directed their efforts toward the team as a whole fostered greater team performance through greater team empowerment. Although the individual-focused and team-focused constructs were partially related, the constructs were mostly distinct from one another and explained unique variance in team performance, supporting my general argument that a leader's entity focus is important in understanding leadership effectiveness.

In addition to the more commonly known leader-member and leader-team interactions, a third interaction-type, leader-subgroup interactions, is introduced to provide a more thorough depiction of the relevant entities in work teams. A leader focusing on subgroups is concerned with facilitating taskwork and teamwork for dyads

or subgroups nested within teams. Accounting for this type of interaction answers calls to accommodate non-uniform team characteristics (Mathieu et al., 2008). For instance, some teams may encounter “hybrid” levels of task interdependence where small subsets of team members work to complete separate aspects of an overall task (Mathieu et al., 2008: 453). In such cases, which may be especially prevalent in virtual teams, project teams, or teams with clear functional faultlines, a leader that directs his or her efforts toward subgroups may explain variance in team effectiveness beyond the individual or overall team-focused constructs.

In sum, person-task focus and entity focus represent two unique dimensions of leader focus. When viewed simultaneously, these constructs contribute to a multi-foci view of team leadership consisting of six distinct categories of leader focus: Task-focused leadership directed toward individuals within the team, the team as a whole, or subgroups within the team, and person-focused leadership directed toward individuals within the team, the team as a whole, or subgroups within the team. A more detailed description of representative behaviors in each category is provided in the following chapters. Having now established a multi-foci view of team leadership, I next develop a theoretical model that offers clarity and prescriptive power to functional leadership theory.

Hypotheses 1 and 2 argue that each category of task-focused and person-focused leadership has a mediated relationship with team effectiveness through task-related (i.e., transition and action processes) and interpersonal processes, respectively. Hypothesis 3 posits that task interdependence moderates the relationship between the different entity-

foci and team processes. Hypothesis 4 then extends this relationship to propose a first stage conditional indirect effect (i.e., mediated moderation), such that indirect effect of leader focus on team effectiveness via team processes is contingent upon task interdependence.

Because my study's critical outcome, team effectiveness, represents a broad construct consisting of several unique components, I use two distinct measures of team performance: team task performance and team helping behaviors. The first outcome, team task performance, represents the extent to which a team accomplishes specific predetermined goals. Although team task performance is argued as a primary dependent variable in many studies, its meaningfulness assumes that a particular work team is largely responsible for their outputs. In environments when clear task performance metrics are unknown or outcomes are highly contingent on outside factors beyond the team's control, however, other outcomes may increase in importance. Therefore, a second effectiveness outcome, team helping behaviors, is also examined. In comparison to task performance, helping behaviors are more commonly associated with team citizenship or contextual performance (Van Dyne & LePine, 1998) and may be more representative of team functioning in certain situations. I do not offer differentiating hypotheses regarding task performance and helping behaviors, but instead expect them to share similar relationships with leader foci, team processes, and task interdependence. A graphical representation of the hypothesized model is shown in Figure 2.4.

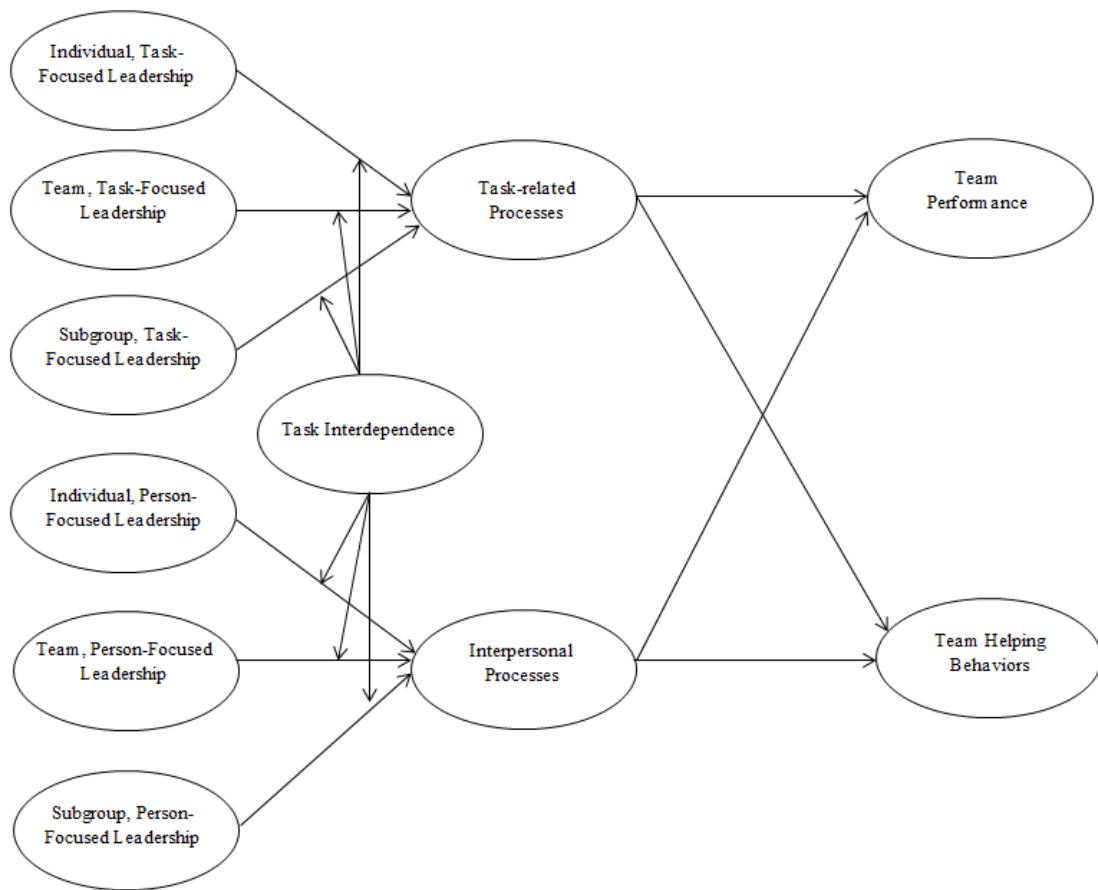


Figure 2.4. Hypothesized multi-foci model of team leadership

2.6 Leader Focus and Team Effectiveness: The Mediating Role of Team Processes

Based on the well-established IPO framework, past work has argued that leadership influences team outcomes by way of enhancing team processes (Klimoski & Mohammed, 1994; Marks, Zaccaro, & Mathieu, 2000; Zaccaro, 2001; Zaccaro et al., 2001; Zaccaro & Klimoski, 2002). To understand how team processes mediate the relationships between leadership and team task performance and helping behaviors, a set of key theoretical links must first be established. In particular, the mediating role of team

processes would be supported, in part, by links between: (a) leader behaviors and team processes, (b) leader behaviors and team outcomes, and (c) team processes and team outcomes.

The first link, which specifies that leadership should be related to team processes, has been discussed in some detail in recent reviews (e.g., Burke et al., 2006; Mathieu et al., 2008; Morgeson et al., 2010). Moreover, a number of recent primary studies have found evidence for process-like variables as mediating mechanisms between team leadership and team effectiveness outcomes (see Burke et al., 2006 and Mathieu et al., 2008 for reviews). However, very few studies, if any, have empirically examined how team leadership influences the specific process types (i.e., task-related and interpersonal processes) conceptualized by Marks et al. (2001), leaving much unknown regarding how leader behaviors link to specific processes. Despite the paucity of empirical work, recent examinations of functional leadership theory have provided theoretical rationales linking leader behavior types to certain processes (Burke et al., 2006; Morgeson et al., 2010; Zaccaro et al., 2001).

In Burke et al.'s (2006) account of functional leader behaviors, task-focused behaviors (i.e., transactional, initiating structure, and boundary spanning) were described in ways that match many of the task-related processes (transition and action processes) described by Marks et al. (2001). For example, transactional behaviors, which are generally concerned with establishing goal and reward expectancies, conceptually align with the transition process "goal specification" and the action process "monitoring progress toward goal." Likewise, person-focused behaviors (i.e., transformational,

consideration, empowering, and motivational) address many of the teamwork needs likely incurred in Marks et al.'s (2001) interpersonal processes. Motivational and consideration behaviors, for instance, overlap with aspects of "motivation and confidence building" and "affect management," respectively.

Morgeson and colleagues (2010) provided a more pointed explanation of how specific leader behaviors meet process needs by proposing a taxonomy of functional leader behaviors that fits neatly into the transition and action categories proposed by Marks et al. (2001). As discussed in earlier sections, many of the functional behavior types proposed by Morgeson et al. (2010) clearly address specific task-related processes. Further, although the authors did not create an explicit category of interpersonal behaviors, they did acknowledge that important interpersonal needs must be met over the course of both transition and action phases. An inspection of the behaviors used in Morgeson et al.'s (2010) taxonomy also reveals that many of the behavioral groups can be classified into task-focused and person-focused groups using the same criteria as Burke and colleagues (2006). Building from this logic, I argue that task-focused leadership should have their strongest influence on task-related processes, whereas person-focused leadership should have their strongest influence on interpersonal processes.

The second link necessary for establishing mediation argues that team leadership has significant direct effects on team effectiveness outcomes. Although studies examining the relationship between leadership and team effectiveness outcomes have been sparse compared to those examining leadership's influence on individual and firm-

level performance (Zaccaro et al., 2001; Mathieu et al., 2008), numerous studies have found evidence of significant relationships between team leadership and team effectiveness. In fact, a recent meta-analysis of 50 empirical studies concluded that team leadership is indeed an important correlate to team effectiveness. Specifically, Burke et al. (2006) concluded that task-focused leadership behaviors were moderately related to perceived team effectiveness ($r = .33$) and team productivity ($r = .20$), whereas person-focused behaviors revealed moderate correlations with perceived team effectiveness ($r = .36$) and team productivity ($r = .28$). Although convincing, scholars have speculated that these effects might be understated, as many of the studies of team leadership have not taken a true team orientation (Burke et al., 2006; Mathieu et al., 2008; Morgeson et al., 2010). In addition to these meta-analytic results, numerous reviews have highlighted the importance of team leadership as a predictor of team effectiveness (e.g., Kozlowski & Bell, 2003; Kozlowski & Ilgen, 2006; Mathieu et al., 2008; Morgeson et al., 2010; Zaccaro et al., 2001). Taken together, the link between team leadership and team effectiveness appears to be grounded both theoretically and empirically.

The final link, which posits that team processes relate to team outcomes, has been established both conceptually and empirically in classic and contemporary research. As discussed in earlier sections, the conceptual notion of team processes as predictors of team effectiveness spans several decades (e.g., Bales, 1950; Hackman, 1987; Marks et al., 2001; McGrath, 1962; Steiner, 1972). Although scholars have long since agreed that team processes are key mechanisms for explaining team effectiveness, empirical work has largely precluded specific conclusions about the role of team

processes until recently (LePine et al., 2008). This is not to suggest scholars have empirically ignored team processes, but rather that scholars have focused on only one (or a few) narrow processes (e.g., Campion, Papper, & Medsker, 1996; Somech, 2006), overly broad process measures (e.g., Kirkman, Tesluk, & Rosen, 2001; Podsakoff, Ahearn, & MacKenzie, 1997), or mediating mechanisms that are not processes at all (Ilgen et al., 2005). However, a recent meta-analysis examining 138 studies found support for the process framework advanced by Marks et al. (2001) (LePine et al., 2008). In addition to clarifying the factor structure (i.e., transition, action, and interpersonal processes), the LePine et al. (2008) meta-analysis also concluded that both the task-related and interpersonal team processes were moderately and positively related to team effectiveness (team performance: $r_{\text{transition}} = .25$, $r_{\text{action}} = .25$, $r_{\text{interpersonal}} = .25$; member satisfaction: $r_{\text{transition}} = .38$, $r_{\text{action}} = .39$, $r_{\text{interpersonal}} = .31$).

To establish an argument for mediation, in addition to providing a rationale for the three sets of relationships discussed above, it is also necessary to provide a rationale for why leadership works *through* team processes to influence team effectiveness. Using functional leadership theory, the underlying logic for the mediating role of team processes in the leader behavior – team effectiveness relationship is that teams face distinct needs as they strive to accomplish team goals, and effective leaders behave in ways that satisfy those needs. In other words, certain leader behaviors meet the needs required to enhance certain team processes, and these processes, in turn, convert team inputs into team outputs. Therefore, leaders that behave in ways that best enable team processes are likely to have the greatest impact on team performance. However, as

argued conceptually in recent work (e.g., Burke et al., 2006; Morgeson et al., 2010), it seems unlikely that all leader actions will influence each of the process types equally.

As discussed more thoroughly in previous sections, the process types described by Marks et al. (2001) and later supported empirically by LePine et al. (2008) fall into two broad categories, including those that deal with accomplishment of tasks (i.e., taskwork) and those that deal with the interactions between team members (i.e., teamwork). In the Marks et al. (2001) framework, transition processes and action processes each deal with task accomplishment, whereas interpersonal processes deal with teamwork. Similarly, functional leader behaviors have traditionally been classified into task-focused and person-focused behaviors (Burke et al., 2006; Fleishman et al., 1991; Mathieu et al., 2008; Salas et al., 1992). Thus, logically, it makes sense to argue that task-focused behaviors likely influence team effectiveness by meeting the needs required for task-related processes, whereas person-focused behaviors are best suited to impact team effectiveness by meeting the needs required to enact interpersonal processes. Based on this logic, I predict:

Hypothesis 1: The relationship between task-focused leadership and (a) team task performance and (b) team helping behaviors will be mediated by task-related processes.

Hypothesis 2: The relationship between person-focused leadership and (a) team task performance and (b) team helping behaviors will be mediated by interpersonal processes.

2.7 The Moderating Role of Task Interdependence

Recent work argues that task interdependence, or the degree to which team members cooperate, work interactively, and depend on one another to achieve a common goal (Campion, et al., 1993; Saavedra et al., 1993; Stewart & Barrick, 2000, Wageman & Gordon, 2005), is not only a defining characteristic of teams, but also represents a critical contingency that must be addressed for researchers to provide a thorough understanding of how teams operate (Barrick, Bradley, Kristof-Brown, & Colbert, 2007; Kozlowski & Bell, 2003; Ilgen et al., 2005). Not surprisingly, team leadership research has also highlighted the likelihood that task interdependence is a key contingency in the team leadership-team effectiveness relationship (e.g., Burke et al., 2006; Kozlowski et al., 2009).

Despite the acknowledgement of task interdependence as an important contingency variable for understanding team leadership, very little is known about how leadership operates in differing levels of task interdependence. This sentiment is supported by a recent meta-analysis by Burke et al. (2006), which notes that “no prior research has investigated the relative importance of leadership under varying conditions of interdependence” (294). This omission is critical for at least two reasons: First, not all teams share a common level of task interdependence, or “teamness.” Second, researchers are increasingly acknowledging that teams likely experience dynamic task characteristics over their lifecycle, including changing levels of task interdependence (Mathieu et al., 2008; Kozlowski et al., 2009; Wageman & Gordon, 2005). Thus, understanding how

task interdependence and leadership interact may hold the key for unlocking a greater understanding of team leadership.

A key theory for understanding how task interdependence operates in the current model of team leadership is social interdependence theory (Deutsch, 1949; Johnson & Johnson, 2005). Social interdependence theory argues that the degree that individuals are reliant on, or interdependent with, each other “determines how participants interact and the interaction patterns determine the outcomes of the situation” (Johnson & Johnson, 2005: 292). Note that this definition can be broken into two related, but distinct, components. First, social interdependence theory posits that the degree of interdependence influences how participants *need* to interact with one another. Second, interdependence influences the *importance* of those interactions. Thus, in the context of functional leadership within the team context, social interdependence theory suggests that leader behaviors aimed at different entities might be more or less effective in facilitating team processes, contingent on the type of interaction being dictated by the level of task interdependence. Second, the impact of the team processes that were facilitated by leader behaviors might have stronger or weaker effects on team effectiveness, again contingent on the level of task interdependence.

To develop an understanding of how task interdependence influences the types of entities that leaders should focus on, it is first necessary to examine how task interdependence influences the types of interactions team members need to employ to accomplish their goals. Past work has largely agreed that task interdependence is primarily concerned with determining team workflow arrangements (Bell & Kozlowski,

2002; Thompson, 1967; Van de Ven et al., 1976), and these workflow arrangements, in turn, offer promising clues into the specific nature of team needs. At a basic level, high levels of task interdependence increase the number and intensity of interactions in a work group (Thompson, 1967). Conversely, when task interdependence is low, the importance of interactions in the group decrease and work can be done more independently (Thompson, 1967). Paired with social interdependence theory, team needs likely shift from individual-based to team-based as task interdependence moves from low to high. Although task interdependence is hypothesized as a continuous variable in this study, for illustrative purposes I provide a brief, albeit categorical summary of how increases in task interdependence alter workflow arrangements, and the inherent needs within these arrangements, in four varying circumstances (e.g., Bell & Kozlowski, 2002; Thompson, 1967; Van de Ven et al., 1976).

The first, and least interdependent workflow arrangement, is referred to as a pooled or additive workflow and describes team members completing tasks independently and then compiling their individual work to create a final product. In this scenario, although the team's overall performance will be related to the quality of each individual member's contribution, individuals are not highly dependent on other members to perform their duties well. As teams move away from social interdependence and toward social independence, the need for social interactions, such as those described in team processes, decreases (Johnson & Johnson, 2005; Thompson, 1967). Accordingly, leaders can best meet team needs by directing their behavioral efforts toward the most pressing entities, in this case individuals. Further, as suggested by Wu and colleagues

(2010), leaders focusing on group or member-member interactions in inappropriate contexts may compromise team effectiveness. However, I should also caution that leaders need to be aware of future team tasks, being wary of exerting too much of a leader-member focus in one time period may jeopardize a team's ability to properly adapt to a high interdependence context in a subsequent time period (Kozlowski et al., 2009).

One step higher in interdependence are the sequential and reciprocal workflow arrangements. A sequential workflow arrangement describes activities flowing from one team member to the next in a sequential pattern. In a sequential arrangement, team members are only dependent on the person immediately preceding them in the workflow arrangement to complete their part of the taskwork. Therefore, each team member only has one other team member (or a small group of members) directly impacting his or her ability to complete taskwork. Similar to the sequential arrangement, but considered slightly more intensive, is the reciprocal workflow arrangement, in which work activities flow back and forth between individual team members over time. In a reciprocal workflow arrangement, team members are reliant only on one (or a select few) other team members to complete their share of the task work.

The sequential and reciprocal workflow arrangements likely overlap with the “hybrid” team structures described by Mathieu et al. (2008) in that they do not explicitly favor an individual-level or true team-level orientation. In these circumstances, leaders need to be concerned with meeting needs that facilitate subgroup interactions (both within subgroups and across subgroups), but must also be aware that individual needs

may be critically important, especially given that many interactions in these arrangements consist of only two members. In essence, moderate levels of task interdependence require that team leaders address “mini-teams” (i.e., subgroups) within the larger domain of the actual team. As such, the member-member entity focus is likely especially important in facilitating the interactions needed to be effective in moderate levels of interdependence.

Finally, in the most interdependent arrangement, the intensive workflow arrangement, team members collaborate simultaneously and intensely to accomplish goals (Thompson, 1967). In this type of arrangement, team members are fully dependent on one another and needs likely center around the active facilitation of team processes (Burke et al., 2006; LePine et al., 2008). To meet these needs, and consistent with the prevailing logic in recent reviews (e.g., Burke et al., 2006; Mathieu et al., 2008; Morgeson et al., 2010; Zaccaro et al., 2009), I argue that leaders need to have a true team-level entity focus.

In summary, team members can largely complete taskwork independently from one another in a low interdependence arrangement (i.e., pooled/additive workflow), but must collaborate intensively with all of the other team members in a high interdependence arrangement (i.e., intensive workflow; Thompson, 1967). Building on the tenets of social interdependence theory (Deutsch, 1949; Johnson & Johnson, 2005), I argue that team needs are likely to be individual-based when task interdependence is low and team-based when task interdependence is higher. In the middle range of task interdependence (i.e., sequential, reciprocal workflow arrangements), team needs are

mixed between individual and team-level, and can likely be met by attending to dyadic or subgroup interactions within the team.

Therefore, in accordance with functional leadership theory's argument that team leaders must satisfy relevant team needs (McGrath, 1962), I posit that a leader's entity focus will differentially influence team processes based on levels of interdependence. Specifically, I hypothesize that individual-focused leadership will have a positive relationship with team processes when task interdependence is low, but this relationship will diminish as task interdependence increases. Conversely, team-focused leadership will have a positive relationship with team processes when task interdependence is high, but will diminish as task interdependence decreases. Similarly, I argue that subgroup-focused behaviors will be positively related to team processes when task interdependence is higher rather than lower, although this relationship is not expected to be as positive as the team-focus -team process relationship in high interdependence settings, or the individual-focus-team process relationship in low interdependence settings. Thus, I predict:

Hypothesis 3A: Task interdependence will moderate the relationship between individual task-focused leadership and task-related processes, such that the relationship is more positive when task interdependence is low rather than high.

Hypothesis 3B: Task interdependence will moderate the relationship between team task-focused leadership and task-related processes, such that the relationship is more positive when task interdependence is high rather than low.

Hypothesis 3C: Task interdependence will moderate the relationship between

subgroup task-focused leadership and task-related processes, such that the relationship is more positive when task interdependence is high rather than low.

Hypothesis 3D: Task interdependence will moderate the relationship between individual person-focused leadership and interpersonal processes, such that the relationship is more positive when task interdependence is low rather than high.

Hypothesis 3E: Task interdependence will moderate the relationship between team person-focused leadership and interpersonal processes, such that the relationship is more positive when task interdependence is high rather than low.

Hypothesis 3F: Task interdependence will moderate the relationship between subgroup person-focused leadership and interpersonal processes, such that the relationship is more positive when task interdependence is high rather than low.

Building on the previous mediating and moderating hypotheses, I hypothesize first stage mediated moderation for the relationships between each of the six categories of leader focus and team outcomes by way of team processes. Following commonly accepted mediation principles (Baron & Kenny, 1986; MacKinnon, 2008; Sobel, 1982), the indirect effects of differently focused leader behaviors on team outcomes through the mediating mechanism of team processes is determined by (a) the influence of leader focus on team processes and (b) the influence of team processes on team effectiveness. Additionally, because I have hypothesized that task interdependence moderates the relationship between leader focus and team processes, the mediating effects of the different team processes are contingent upon task interdependence. Therefore, I hypothesize:

Hypothesis 4A: The indirect effect of individual task-focused leadership on (a)

team task performance and (b) team helping behaviors via task-related processes is moderated by task interdependence.

Hypothesis 4B: The indirect effect of team task-focused leadership on (a) team task performance and (b) team helping behaviors via task-related processes is moderated by task interdependence.

Hypothesis 4C: The indirect effect of subgroup task-focused leadership on (a) team task performance and (b) team helping behaviors via task-related processes is moderated by task interdependence.

Hypothesis 4D: The indirect effect of individual person-focused leadership on (a) team task performance and (b) team helping behaviors via interpersonal processes is moderated by task interdependence.

Hypothesis 4E: The indirect effect of team person-focused leadership on (a) team task performance and (b) team helping behaviors via interpersonal processes is moderated by task interdependence.

Hypothesis 4F: The indirect effect of subgroup person-focused leadership on (a) team task performance and (b) team helping behaviors via interpersonal processes is moderated by task interdependence.

CHAPTER III

METHODOLOGY

3.1 Chapter Summary

In the previous chapter, I proposed a theoretical model of functional team leadership, specifically arguing that a multi-foci conceptualization of leadership (i.e., person-task focus and entity focus) influences team effectiveness through different sets of team processes and, further, interacts with task interdependence to increase or decrease the strength of these relationships. In the present chapter, I describe the research methodology used to empirically test this model. I begin with a discussion of how the leader focus scales were developed, followed by a description of the study sample, data collection procedures, and how independent, dependent, and relevant control variables were assessed.

3.2 Development of Leader Focus Scales

As described in Chapter 2, leader focus is conceptualized as a multi-foci construct represented by six unique variables: person-focused leadership directed toward (1) individuals, (2) the team as a whole, and (3) subgroups within the team; and task-focused leadership directed toward (4) individuals, (5) the team as whole, and (6) subgroups within the team. Because there was no precedent for assessing this construct, I developed a new measure using a combination of quantitative and qualitative procedures. When possible, I relied on established procedures to guide the scale development.

A major challenge in developing this scale was to make sure that items reflected a leader's focus on a specific dimension rather than a particular set of leader behaviors (e.g., transformational, empowering, transactional). For example, although leader consideration and initiating structure behaviors theoretically fall into person-focused and task-focused categories (Burke et al., 2006), respectively, they may not fully capture the complete spectrum of person-focused and task-focused leadership. Rather, the intent of the leader focus construct was to look beyond specific sets of leader behaviors (e.g., transformational, transactional, consideration, initiating structure, etc.) and instead capture the direction of a leader's effort and attention. To accomplish this goal, I began my search for representative focus items by obtaining a thorough list of 517 leader behaviors proposed in previous literature by contacting the first author of a recent team leadership review article (see Morgeson et al., 2010, for a detailed description of how these behaviors were collected). After extensively reviewing the list of 517 leader behaviors and accounting for duplicate items, I agreed with the authors' assessment that the original list could be reasonably broken down into 82 representative behaviors by using rigorous and well-accepted taxonomic principles (Fleishman & Quaintance, 1984).

Before refining these 82 behaviors into an abbreviated set of leader focus items, I added the items from Stogdill's (1963) initiating structure and consideration scales, Kirkman and Rosen's (1999) empowering leadership scale, and Bass and Avolio's (1995) transformational and transactional leadership scales (MLQ5X). Although the additional items were originally included in Morgeson et al.'s (2010) listing of leadership behaviors, they were not classified in the list of 82 representative items

because they were similar to other items. This omission was not problematic in a conceptual sense, but, to ensure sufficient rigor, I wanted to include the explicit types of person-focused and task-focused behaviors described in the recent Burke et al. (2006) meta-analysis in my subsequent procedures. Thus, in total, 156 possible leadership items were considered in the person- and task-focused classification exercises described below.

As a first stage in the classification process, I coded items that clearly and explicitly represented person- and task-focused behaviors, regardless of how the item's original source had been coded in Burke et al.'s (2006) meta-analysis (e.g., items from the transformational leadership scale were not assumed to be person-focused, nor were transactional leadership items assumed to be task-focused). A large number of behaviors (65) could not be coded as explicitly person-focused or task-focused because they could conceivably represent either category depending on what qualifiers were added to the statement. For example, the item "participates in problem solving" could be reasonably interpreted as "participates in solving relationship problems between team members" or "participates in solving task-related problems." Similarly, the item "responds promptly to needs or concerns" could address interpersonal needs or concerns, or contrastingly, might be interpreted as addressing task-related needs. Given this ambiguity, I listed these items as two distinct items that explicitly addressed person-focused or task-focused issues going forward.

Next, where possible, I identified each of the 156 item's original source so that behaviors could be independently categorized into the same person or task-focused

categories used in the Burke et al. (2006) meta-analysis. That is, leadership behaviors that have been used to capture consideration, empowering, motivational, and transformational leadership were categorized as person-focused, whereas behaviors that represent initiating structure, boundary spanning, and transactional leadership were categorized as task-focused. I then compared my own original categorization with the Burke et al. (2006) categorization and removed any directly opposing items. For example, I coded “Suggests new ways of looking at how to complete work” (a transformational leadership behavior) as task-focused, but this was classified as a person-focused behavior using the Burke et al. (2006) guidelines. Therefore, this item was removed from the list of potential representative behaviors. By comparing my independent categorizations with those created in well-accepted research, I essentially replicated the process of using multiple subject matter experts to classify items.

After removing potentially misleading behaviors and duplicate items, 132 behaviors remained. To further reduce this compilation, I attempted to identify behaviors that could be easily modified to address each of the three focal entities without compromising the item’s intended meaning. Changing items to address different focal entities is consistent with other recent multi-foci scales (Liao & Rupp, 2005). I sought to keep the same leadership items across different entities to ensure that I would capture differences in entity focus and not idiosyncratic behavioral differences. An example of an ideal item is, “Communicates expectations of high task performance to [individuals/team/subgroups]” (e.g., communicates expectations of high task performance to individuals; communicates expectations of high task performance to the

team; communicates expectations of high task performance to subgroups). A sample discarded item would be “monitors changes in the external environment.” Although this likely represents a useful task-focused behavior, it cannot be easily modified to uniquely address the individual, team, and member-member entities. Moreover, because the idea behind the hypothesized model was to test the effectiveness of the direction of a leader’s effort and attention (i.e., focus) rather than the effectiveness of specific leadership behaviors, I was not concerned about compromising specific behavioral domains. After identifying items that could neatly address all three identities, a listing of 39 items remained.

As a final stage in the item reduction process, I enlisted 20 doctoral students and faculty at two large research universities in the southern United States to rate each behavior as being person-focused, task-focused, or neither. Items that displayed agreement levels lower than 75% agreement were then removed from the listing. In total, 5 person-focused and 6 task-focused behaviors were selected for use in this study. A listing of these items as well as their actual survey presentation is shown in Table 3.1.

To test whether respondents could distinguish between the different leadership foci, I piloted the newly created scales using a sample of 461 undergraduate students at a large university in the southern United States. Of these students, 38% were female and the average age was 21.8 years old ($SD = 3.9$). Respondents were asked to complete a short online survey in exchange for course credit. Before answering questions, the survey instructions asked respondents to think about their most recent experience working as part of a group or team that had a formal leader. Respondents were then

given brief definitions of the three different entities (i.e., individuals, the team as a whole, and subgroups) before answering questions about their leader. Table 3.2 displays scale properties and correlations for the pilot sample.

Table 3.1
Leader Focus Items and Presentation

To what extent does your leader do the following for...	...individual team members?	...the team as a whole?	...subgroups within the team?
1. Helps develop solutions to relationship-related problems (i.e., personal disagreements).			
2. Responds promptly to personal needs or concerns.			
3. Engages in actions that demonstrate respect and concern.			
4. Goes beyond own interests for the good of others.			
5. Trusts us.			
6. Ensures clear task performance goals.			
7. Structures how work is done.			
8. Clarifies task performance strategies.			
9. Provides task-related instructions.			
10. Reviews relevant task performance results.			
11. Monitors task performance.			

Note. Items 1-5 are person-focused, items 6-11 are task-focused.

Table 3.2
Variable Descriptive Statistics and Correlations (Pilot Study)

Variable	Mean	SD	1	2	3	4	5	6
1. Individual, Task-Focused	3.33	.76	(.82)					
2. Team, Task-Focused	3.63	.77	.52**	(.86)				
3. Subgroup, Task-Focused	3.25	1.00	.54**	.52**	(.93)			
4. Individual, Person-Focused	3.36	.82	.57**	.52**	.45**	(.83)		
5. Team, Person-Focused	3.52	.84	.49**	.68**	.49**	.69**	(.84)	
6. Subgroup, Person-Focused	3.25	1.02	.48**	.45**	.79**	.60**	.62**	(.91)

Note. Diagonal entries are scale reliabilities. $N = 461$. * $p < .05$, ** $p < .01$; All items were assessed using 5-point Likert-type scales.

Results from the pilot study revealed that the scales for each of the proposed focal dimensions met generally accepted reliability thresholds, but also uncovered that several of the dimensions were significantly correlated with one another. To assess the discriminant validity of the piloted scales, a set of confirmatory factor analyses (CFA) were conducted in IBM SPSS AMOS 19.0. Table 3.3 presents each model's fit statistics, including chi-square value, root mean square error of approximation (RMSEA; Steiger & Lind, 1980), and comparative fit index (CFI; Bentler, 1990). Chi-square values are useful for comparing the fit of nested models. RMSEA is unique in comparison to some other fit indices in that it features corrections for model complexity, meaning that the simpler of two similar models will be preferred (Kline, 2005). RMSEA values less than .05 are considered indicative of a good fit, values less than .08 considered reasonable fit,

and values exceeding .10 considered mediocre or poor fit (Browne & Cudeck, 1993). CFI is commonly used in organizational research and is considered one of the best approximations model fit, with values greater than .90 generally indicative of good fit (Mathieu, Gilson, & Ruddy, 2006; Medsker, Williams, & Holahan, 1994). In each of the tested models, I specified the correlations between the error terms of indicators with the same item stems (e.g., the errors associated with item #1 for individual task-focused leadership correlated with the errors of item #1 of the team task-focused and subgroup task-focused scales). This was done because there was a theoretical expectation that residuals would be highly correlated due to common methods (i.e., similar item stems; Bollen, 1989; Brown, 2006; Kline, 2005; Marsh & Grayson, 1995).

The proposed 6-factor CFA model displayed good fit indices, $\chi^2(447, N = 461) = 862.20, p < .01$; CFI = .96; RMSEA = .04, and all indicators in the 6-factor model yielded significant relationships ($p < .01$) with their corresponding latent variables. Moreover, the 6-factor model displayed superior fit to several theoretically and empirically-driven alternative models. Alternative models included a one-factor model, where all items loaded onto a single leadership factor, a two-factor model featuring the classical person-focused and task-focused distinction, and three-factor model with individual, team, and subgroup latent variables, and a five factor model, which allowed the two highest correlated factors (subgroup task-focused and subgroup person-focused) to collapse onto a single factor¹.

¹ Because CFA relies heavily on substantive user specifications to the measurement models, it is not uncommon for highly correlated factors, such as the subgroup task-focused and subgroup person-focused dimensions of leader focus ($r = .79$), to be supported as distinct empirical factors (Brown, 2006; Kline, 2005). As such, it is imperative for model specifications to be guided by appropriate theory or thorough

Table 3.3
Comparison of Measurement Models for Pilot Study Variables

Model	Description	χ^2	<i>df</i>	$\Delta \chi^2$	RMSEA	CFI
Null model	All indicators independent	7225.08	495			
Hypothesized Six-Factor Model	Indiv. Task-Focused, Team Task-Focused, Subgroup Task-Focused, Indiv. Person-Focused, Team Person-Focused, Subgroup Person-Focused;	862.20	447	6362.88	.04	.96
Model 1	One Factor: All indicators were combined to one factor;	3332.96	462	2500.76*	.12	.69
Model 2	Two factors: Task-Focused and Person-Focused;	2982.99	461	2120.79*	.11	.73
Model 3	Three Factors: Individual-Focused, Team-Focused, and Subgroup-Focused;	1497.79	459	635.59*	.07	.89
Model 4	Five factors: Subgroup-Focused constructs collapsed to one factor;	1171.71	452	309.51*	.06	.92

Note. * $p < .05$

3.3 Sample

To test the hypothesized model, I examined firefighter crews assembled across four municipal fire departments in the southern United States. Past work has established that emergency response teams, such as firefighter crews, are well-suited for the examination of group and team-level theories (e.g., Bigley & Roberts, 2001; Colquitt, LePine, Zapata, & Wild, 2011; Pillai & Williams, 2004; Rico, Sanchez-Manzanares, Gil,

empirical evidence. Although the 6-factor model was theoretically derived, the newness of the leader focus constructs warranted further investigation. Thus, an additional exploratory factor analysis (EFA) was conducted. Rotated factor loadings suggested that the two subgroup-focused dimensions generally load onto a single factor. It was unknown if this was due to sample characteristics or unfamiliarity with notion of “subgroups.” Ultimately, the two subgroup-focused scales were retained, but more emphasis was placed on defining and explaining the term “subgroups” in future investigations.

& Gibson, 2008). The firefighter crews, or teams, in this sample, worked interdependently in stable and consistent groups during 24-hour shifts every third day. A municipal firefighting crew's specific job duties include urgently responding to any injury- or fire-related 9-1-1 calls (e.g., fire alarms, automobile and industrial accidents, medical emergencies), rescuing persons and property from hazardous situations (e.g., fire and flooding), operating large equipment (e.g., fire engines, ambulances, "jaws of life" extraction equipment), and participating in community education events and ceremonies (e.g., visiting schools, conducting public training workshops, promoting public safety at events). Because of the long shifts and unpredictable workflow, each crew is also tasked with maintaining a quality living environment in their respective station, with common tasks including preparing meals, washing dishes, cleaning the living quarters, and laundering clothes and equipment. Thus, given the unpredictable nature of emergency response events, a crew's tasks may vary widely from one shift to another.

In addition to a wide array of task-type variance *within* crews, interviews with department leaders and crew members suggested that there is also substantial variance in task-type *between* crews. For example, crews in high-traffic urban areas may respond to a larger number of automotive accident reports and experience more complex structural fires, whereas crews in more sparsely populated areas may be more likely to encounter grass fires or agricultural incidents. The across-team variance described by department leaders was important as it provided reasonable confidence that the sample would be able to adequately address task interdependence as a moderating contingency.

To increase the likelihood of task differences, namely interdependence, the departments selected for use in this study represented several different population densities and emergency environments. Department A was not located near a major metropolitan area and served a 616 square mile area populated by approximately 112,000 citizens (181 citizen/sq mi). Department B was located in the center of a large metropolitan area (2.7m metro population) and served a 179 square mile area with approximately 330,000 citizens (1,844 citizen/sq mi). Department C served a nearby suburban of a large metropolitan area (6.3m metro population) with approximately 140,000 citizens in a 47 square mile footprint (2,978 citizen/sq mi). Department D also served a suburban area of a large metropolitan area (6.3m metro population) with approximately 227,000 citizens in a 57 square mile footprint (3,982 citizens/sq mi). All departments consisted of full-time, paid firefighters. Departments A and B were unionized, whereas Departments C and D were considered part of a strong professional association.

All of the crews in this sample, regardless of department affiliation, were governed using a paramilitary hierarchy, such that each crew consisted of a number of firefighters, called team members herein, based on the size and quantity of the equipment housed at the station, and a station captain, referred to herein as a team leader, who was responsible for organizing and directing the crew's work. The team leader was supervised by department-level leadership, namely the department chief. Each crew in this study featured a mix of functional and cross-functional team characteristics. For example, a typical station housed at least one ambulance and one fire

engine. Two members of the team specialized in operating the ambulance during emergency calls, whereas three or four members specialized in driving and operating the various components of the fire engine. Despite these functional breakdowns, each crew member was a licensed paramedic and was cross-trained to perform a number of duties once on site. That is, the ambulance crewmen and engine crewmen were not limited to their apparatus after arriving at a fire or accident scene. In sum, the possibility of completing tasks in a number of different ways (i.e., functional or cross-functional) seemed ideal for examining leadership as it relates to individuals, the team as a whole, and subgroups within the team (e.g., ambulance, engine, and truck “subgroups”).

In total, I solicited 95 teams consisting of 470 crewmen and 95 leaders for responses. Seventy members and leaders (6 leaders, 64 members; 12.6%) of the targeted crews were absent (e.g., vacation or sick leave), had other professional obligations (e.g., continuing education, community engagements), or were substituting at another fire station on the date of the survey administration. An additional 22 responses were discarded because they were illegible, unmatchable (i.e., they did not have matching member-leader responses), or were part of a team with an unacceptable overall team response rate (i.e., less than 50%). The revised sample consisted of 384 firefighters (81.7% member response rate) and 89 captains (93.7% response rate) representing 89 total crews. Department chiefs completed a performance assessment for each participating and usable team in their department, resulting in a final sample of 89 teams.

At the individual-level, the sample was 94% male, 84% white, and 96% reported having at least some college education. The average age was 37.9 years old ($SD = 8.6$),

organizational tenure averaged 11.1 years ($SD = 8.0$), and current team tenure averaged 3.3 years ($SD = 3.8$). At the team-level, teams averaged 5.3 responding members (includes captains; $SD = 1.8$) and the mean within-team response rate was 85.2% ($SD = 16.4\%$). Finally, 35 teams were from Department A (39.3%), 21 from Department B (23.6%), 19 from Department C (21.3%), and 14 from Department D (15.7%).

I assessed study variables by administering paper-based surveys to team representatives. To reduce concerns associated with common method bias, I solicited different assessments from team members, team leaders, and department chiefs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Team members and team leaders provided assessments concurrently at a single time point, whereas the department chief provided organizational performance ratings approximately 2 months after the crews completed their assessments. A description of these assessments is provided in Table 3.4. Each participant in this study was assured confidentiality and informed that only aggregate findings would be presented to organizational leadership (i.e., no individual or team-level identifiers would be included). Further, all three data sources completed surveys in the absence of the other groups to ensure candid responses. To encourage a higher response rate, I informed each crew that their entire team would be eligible to win prizes (ranging in value from \$50-\$500) if they achieved a 100% team response rate.

Table 3.4
Data Sources

Measure / Source	Members (Firefighters)	Leaders (Captains)	Organization (Chief)
Team Size _a	X		
Team Tenure _a	X		
Leader Focus _b	X		
Team Processes _{bc}	X		
Task Interdependence _b	X		
Team Helping Behaviors _c		X	
Team Performance* _c			X

Note. _a = control variable, _b = independent variable, _c = dependent variable; *Two month lagged assessment.

3.4 Procedure and Measures

All items were assessed using 7-point Likert-type scales. Individual team member responses were aggregated to the team-level to be consistent with the unit of analysis in the hypothesized model. In order to justify aggregation of individual-level responses, substantive theoretical and psychometric requirements need to be satisfied (Rousseau, 1985). From a substantive perspective, the referent of team member survey items was shifted from individual perceptions to the team-level perceptions. From a psychometric perspective, only measures with sufficient within-team agreement were used. Specifically, the r_{wg} agreement indices (James, Demaree, & Wolf, 1984), based on

rectangular response distributions, were evaluated against generally accepted cutoffs. Although r_{wg} cutoffs are not absolute (Lance, Butts, & Michels, 2006), recent team research has argued that median r_{wg} values greater than .70 are adequate for aggregation (e.g., Kirkman, Mathieu, Cordery, Rosen, & Kukenberger, 2011; Mathieu, Gilson, & Ruddy, 2006). Additionally, aggregate-level alphas and intraclass correlations (ICCs) are reported. ICC₁ captures the percentage of member-level variance that can be attributed to team membership; ICC₂ captures the reliability of the mean of member responses (Bliese, 2000). The analysis of variance (ANOVA) F values were significant ($p < .05$) in all cases, meaning that team membership was responsible for significant variance in the measures.

3.4.1 Leader Focus

Leader focus was rated by team members and was measured using the same items as used in the pilot study. Team members were given a brief description and example of what was meant by “individuals within the team,” “the team as a whole,” and “subgroups within the team.” Members were then asked to rate the extent to which their leader, in general, performed each behavior toward individuals, the team as a whole, and subgroups within the team (see appendix). The psychometric properties for the six dimensions of leader focus were as follows: individual task-focus (median r_{wg} = .89; ICC₁ = .20; ICC₂ = .53; α = .93), team task-focus (median r_{wg} = .92; ICC₁ = .20; ICC₂ = .52; α = .91), subgroup task-focus (median r_{wg} = .89; ICC₁ = .18; ICC₂ = .49; α = .95), individual person-focus (median r_{wg} = .92; ICC₁ = .34; ICC₂ = .70; α = .87), team person-focus (median r_{wg} = .93; ICC₁ = .36; ICC₂ = .72; α = .85), subgroup person-focus

(median $r_{wg} = .92$; $ICC_1 = .24$; $ICC_2 = .59$; $\alpha = .90$). Although the agreement indices were high enough to appropriately justify aggregation, in some cases the ICCs were modest, suggesting limited variance across teams. However, the amount of between-team variance was significant in all cases, meaning that the tests described in the next chapter are likely conservative.

Given the significant and high correlations amongst some of the leader focus variables, I conducted a set of CFAs to examine the discriminant validity of the constructs. Because of the limited sample size at the team-level of analysis ($N = 89$), each focus variable was indicated by three parcels of two items each. I created the parcels randomly but consistently for each of person-focused and task-focused categories. For example, if parcel 1 for the individual task-focused leadership latent variable was created by combining items #1 and #6, then parcel 1 for the team task-focused and subgroup task-focused latent variables were also created using items #1 and #6. I created parcels consistently across entities so that measurement errors could still be correlated with a theoretical justification (i.e., there is still an underlying measurement factor, in this case identical item stems, at play; Bollen, 1989; Brown, 2006; Kline, 2005; Marsh & Grayson, 1995). Results, shown in Table 3.5, support the notion of a 6 factor model despite the high correlation among variables.

3.4.2 Team Processes

Team processes were rated by team members and measured using 30 items that aligned with the 10 team processes outlined in the Marks et al. (2001) taxonomy. These items were developed by the original authors (Mathieu & Marks, 2006) and are currently

under journal review. Task-related processes, which capture both transition and action processes, were captured using seven 3-item subscales that corresponded to mission analysis, goal specification, strategy formulation, monitoring progress toward goal, resource and systems monitoring, team monitoring and backup, and coordination and planning. Sample items include “To what extent does your team identify the key challenges we expect to face?”, “set goals for the team?”, “regularly monitor how well we are meeting our team goals?”, “assist each other when help is needed?”, and “coordinate our activities with one another?”

Similar to the task processes mentioned above, interpersonal processes were captured using three 3-item subscales designed to assess conflict management, motivation and confidence building, and affect management. Sample interpersonal process items include “To what extent does your team show respect for one another?”, “encourage others to perform at our very best?”, and “share a sense of togetherness and cohesion?” The psychometric properties for the two sets of team processes were as follows: task-related processes (median $r_{wg} = .98$; $ICC_1 = .12$; $ICC_2 = .38$; $\alpha = .96$), interpersonal processes (median $r_{wg} = .96$; $ICC_1 = .11$; $ICC_2 = .36$; $\alpha = .94$).

Table 3.5
Comparison of Measurement Models for Leader Focus Variables

Model	Description	χ^2	df	$\Delta \chi^2$	RMSEA	CFI
Null model	All indicators independent	1178.57	135			
Hypothesized Six-Factor Model	Indiv. Task-Focused, Team Task-Focused, Subgroup Task-Focused, Indiv. Person-Focused, Team Person-Focused, Subgroup Person-Focused;	190.02	102	988.55*	.09	.96
Model 1	One Factor: All indicators were combined to one factor;	679.95	117	489.93*	.23	.74
Model 2	Two factors: Task-Focused and Person-Focused;	577.55	116	387.53*	.21	.79
Model 3	Three Factors: Individual-Focused, Team-Focused, and Subgroup-Focused;	386.35	114	196.33*	.17	.88
Model 4	Four factors: All person-focused collapsed to one factor;	408.06	111	218.04*	.17	.86
Model 5	Five factors: Individual Person-Focused and Team Person-Focused collapsed to one factor;	275.55	107	85.53*	.13	.92

Note. * $p < .05$

3.4.3 Task Interdependence

I measured task interdependence over other similar and potentially relevant contingencies, namely the more broad team interdependence (comprised of task

interdependence, goal interdependence, and outcome/reward interdependence; Campion et al., 1993), because fire crews often share similar goals and reward structures regardless of department affiliation. As noted earlier, however, pre-study interviews suggested that task interdependence would substantially vary between teams, which should provide a more meaningful test of the model's theoretical arguments. Task interdependence was measured using Wageman and Gordon's (2005) 6-item scale. Sample items include "We work as a team, not a collection of individuals with their own tasks to perform," "We often have to share materials and ideas to get our work done," and "We often have to talk to other people in the group to do our job well." The median r_{wg} was .91, $ICC_1 = .08$, $ICC_2 = .29$, and $\alpha = .75$.

Because the six leader focus variables, the two team process variables, and task interdependence were rated by a common source (i.e., team members), I conducted a series of CFAs to evaluate the discriminant validity of the measures. Keeping in mind adequate indicator-to-sample size ratio, I conducted the CFAs at the individual level of analysis ($N = 384$) using all indicators of the leader focus and task interdependence scales and the subscale dimensions as indicators of the two latent team process constructs. Recent work has noted that conducting CFAs at the individual level of analysis in team research can be useful for dealing with small sample sizes and, moreover, individual-level tests are thought to be more conservative (Chen et al., 2007; Kirkman et al., 2009). Similar to the pilot study, the error terms of similarly worded leader focus items were allowed to correlate to account for common method variance (Bollen, 1989; Brown, 2006; Kline, 2005; Marsh & Grayson, 1995). As expected, the

baseline 9-factor model displayed acceptable fit indices and was superior to several alternative models with fewer factors, $\chi^2 (1058, N = 384) = 2843.13, p < .01$; CFI = .90; RMSEA = .06. All indicators and subscales, where applicable, had significant ($p < .01$) relationships with their corresponding latent variables. A summary of the model comparisons is provided in Table 3.6.

3.4.4 Team Task Performance and Helping Behaviors

Because finding a single measure of team effectiveness for fire crews is difficult, I collected two subjective measures that captured distinct outcomes. First, department chiefs completed a 6-item rating of general team task performance for each crew in their department. Items were developed by Kirkman and Rosen (1999) and included “This team meets or exceeded its goals” and “This team makes sure that products and services meet or exceed quality standards.” The scale exhibited high reliability ($\alpha = .96$).

Table 3.6
Comparison of Measurement Models for Member-rated Variables

Model	Description	χ^2	<i>df</i>	$\Delta \chi^2$	RMSEA	CFI
Null model	All indicators independent	13736.11	1143			
Hypothesized Nine-Factor Model	Indiv. Task-Focused, Team Task-Focused, Subgroup Task-Focused, Indiv.	2843.13	1058	10892.98*	.06	.90
	Person-Focused, Team					
	Person-Focused, Subgroup					
	Person-Focused, Task Processes, Interpersonal Processes, Task Interdependence;					

Note. * $p < .05$

Table 3.6, continued

Model	Description	χ^2	<i>df</i>	$\Delta \chi^2$	RMSEA	CFI
Model 1	One Factor: All indicators were combined to one factor;	10187.56	1094	3548.55*	.15	.51
Model 2	Three factors: All leader focus combined, Team Processes combined, and Task Interdependence;	7808.60	1091	5927.51*	.13	.64
Model 3	Four factors: All leader focus combined, Task Processes, Interpersonal Processes, and Task Interdependence;	7530.76	1088	6205.35*	.12	.65
Model 4	Four factors: Task-focused, Person-Focused, Team Processes combined, and Task Interdependence;	6991.88	1088	6744.23*	.12	.68
Model 5	Five factors: Task-focused, Person-Focused, Task Processes, Interpersonal Processes, and Task Interdependence;	6709.29	1084	7026.82*	.12	.70
Model 6	Five factors: Indiv.-focused, Team-Focused, Subgroup-Focused, Team Processes combined, and Task Interdependence;	4917.55	1084	8818.56*	.10	.79

Note. * $p < .05$

Table 3.6, continued

Model	Description	χ^2	<i>df</i>	$\Delta \chi^2$	RMSEA	CFI
Model 7	Six factors: Indiv.-focused, Team-Focused, Subgroup-Focused, Task Processes, Interpersonal Processes, and Task Interdependence;	4635.56	1079	9100.55*	.09	.81
Model 8	Eight factors: Indiv. Task-Focused, Team Task-Focused, Subgroup Task-Focused, Indiv. Person-Focused, Team Person-Focused, Subgroup Person-Focused, Team Processes combined, Task Interdependence.	3129.50	1066	10606.61*	.07	.89

Note. * $p < .05$

A second measure of team effectiveness aimed to capture an important component of the team's contextual performance: helping behaviors. Helping behaviors are particularly relevant to emergency response teams given the dangerous aspects of their work. Team leaders assessed helping using 7 items adapted from Van Dyne and LePine (1998). Sample items were, "In general, members of the team I lead volunteer to do things for this work group" and "In general, members of the team I lead help others in this group with their work responsibilities." The scale exhibited high reliability ($\alpha = .92$).

3.4.5 Control Variables

Prior research has suggested that certain team characteristics, including team size and team tenure, may affect team dynamics and processing (e.g., Kirkman, Rosen,

Tesluk, & Gibson, 2004). To rule out these potentially confounding effects, I included team size and members' average team tenure as control variables in the statistical tests. The average team size was 6.28 members ($SD = 1.75$) and the average team tenure for members was 3.17 years ($SD = 2.18$).

A summary of the study variables and their descriptive statistics is provided in Table 3.7. A complete listing of team member, team leader, and department chief survey items is provided in Appendix B, Appendix C, and Appendix D, respectively.

Table 3.7
Summary of Study Variables

Variable	Source	Mean	SD	r_{wg}	ICC ₁	ICC ₂	α
<u>Control Variables</u>							
Team Size	Members	6.28	1.75	--	--	--	--
Team Tenure	Members	3.17	2.18	--	--	--	--
<u>Independent Variables</u>							
Individual Task-Focus	Members	4.91	.89	.89	.20	.53	.93
Team Task-Focus	Members	5.54	.68	.92	.20	.52	.91
Subgroup Task-Focus	Members	4.73	.97	.89	.18	.49	.95
Individual Person-Focus	Members	5.47	.90	.92	.34	.70	.87
Team Person-Focus	Members	5.65	.81	.93	.36	.72	.85
Subgroup Person-Focus	Members	5.29	.96	.92	.24	.59	.90
<u>Mediators and Moderator</u>							
Task Processes	Members	5.32	.57	.98	.12	.38	.96
Interpersonal Processes	Members	5.67	.59	.96	.11	.36	.94
Task Interdependence	Members	5.74	.51	.91	.08	.29	.75
<u>Dependent Variables</u>							
Team Helping Behaviors	Leaders	5.80	.98	--	--	--	.96
Team Task Performance	Chief	4.66	1.02	--	--	--	.92

CHAPTER IV

RESULTS

4.1 Chapter Summary

In this chapter, I describe the statistical procedures used to test each of the hypotheses, followed by the results for each test. When applicable, I discuss additional exploratory tests.

Table 4.1 presents the means, standard deviations, correlations, and scale reliabilities for each study variable. As expected, each of the three unique task-focused leadership variables displayed positive and significant correlations with team task processes ($r_{\text{individual}} = .31$, $r_{\text{team}} = .37$, $r_{\text{subgroup}} = .33$; $p < .01$). Similarly, the three person-focused leadership variables displayed positive and significant relationships with team interpersonal processes ($r_{\text{individual}} = .40$, $r_{\text{team}} = .43$, $r_{\text{subgroup}} = .38$; $p < .01$). Task processes and interpersonal processes showed positive and significant relationships with team helping behaviors ($r_{\text{task processes}} = .22$, $r_{\text{interpersonal processes}} = .33$; $p < .05$), but not team task performance. However, each of the six leader focus variables displayed positive and significant relationships with team task performance ($r_{\text{individual task}} = .27$, $r_{\text{team task}} = .39$, $r_{\text{subgroup task}} = .21$, $r_{\text{individual person}} = .24$, $r_{\text{team person}} = .30$, $r_{\text{subgroup person}} = .25$; $p < .05$).

Table 4.1
Variable Descriptive Statistics and Correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Team Size _a	6.28	1.75	.19												
2. Team Tenure _a	3.17	2.18	.07	-.09											
3. Individual, Task-Focused Leadership _a	4.91	0.89	-.07	-.07	(.93)										
4. Team, Task-Focused Leadership _a	5.54	0.68	.08	-.05	.69**	(.91)									
5. Subgroup, Task-Focused Leadership _a	4.73	0.97	.10	.14	.87**	.69**	(.95)								
6. Individual, Person-Focused Leadership _a	5.47	0.90	.08	.05	.49**	.51**	.45**	(.87)							
7. Team, Person-Focused Leadership _a	5.65	0.81	.15	-.02	.42**	.60**	.45**	.89**	(.85)						
8. Subgroup, Person-Focused Leadership _a	5.29	0.96	.20	.16	.56**	.46**	.61**	.85**	.83**	(.90)					
9. Task Processes _a	5.32	0.57	.11	.14	.31**	.37**	.33**	.50**	.47**	.39**	(.96)				
10. Interpersonal Processes _a	5.67	0.59	.23*	.19	.07	.24*	.09	.40**	.43**	.28**	.69**	(.94)			
11. Task Interdependence _a	5.74	0.51	.20	.11	-.09	.15	-.04	.28**	.35**	.14	.39**	.51**	(.75)		
12. Team Helping Behaviors _b	5.80	0.98	-.11	.01	-.03	.09	.05	.16	.24*	.12	.22*	.33**	.22*	(.96)	
13. Team Task Performance _c	4.66	1.02	.18	-.08	.27*	.39**	.21*	.24*	.30**	.25*	.18	.05	.05	.09	(.92)

Note. Diagonal entries are scale reliabilities. $N = 89$. * $p < .05$, ** $p < .01$; All items were assessed using 7-point Likert-type scales.
_a, rated by team members; _b, rated by team leaders; _c, rated by department chief.

4.2 Analyses

I tested hypotheses 1 and 2 using structural equation modeling in IBM SPSS AMOS 19.0. Specifically, I fit a linear effects structural model, without the interaction terms, to examine the mediating role of team processes. Given the large number of parameters that needed to be estimated in the hypothesized model along with only a modest sample size ($N = 89$), I treated the mediating variables (i.e., task processes and interpersonal processes) and dependent variables (i.e., performance and team helping behaviors) as observed scores (i.e., the mean of scale items). However, because the CFAs described in the previous chapter revealed that the six leader focus constructs were only discriminant from one another when corresponding item- or parcel-level measurement errors were allowed to correlate, I modeled each focus construct using three parcels of two items each as indicators. Thus, theoretically, method effects were accounted for and a more discriminant view of leader focus was obtained.

To test Hypothesis 3, which proposed task interdependence as a moderator of the leader focus-team process relationships, I used moderated regression analysis using ordinary least squares (OLS) procedures. Where applicable, I conducted simple slope analyses and examined the actual form of significant interactions by plotting simple slopes at one standard deviation above and below the mean of task interdependence.

Finally, Hypothesis 4, which posited a conditional indirect effect (Preacher, Rucker, & Hayes, 2007) such that the mediated relationships proposed in Hypothesis 1 and Hypothesis 2 were moderated by task interdependence, was tested using the procedures outlined by Preacher and colleagues (2007). This method has been used in

recent research (e.g., Cole, Walter, & Bruch, 2008) and employs recommended bootstrapping methods for examining the significance of conditional indirect effects.

4.3 Results

Hypothesis 1 posited that task-focused leadership would influence team task performance and team helping behaviors by way of task-related processes. Similarly, Hypothesis 2 indicated that person-focused leadership would influence team task performance and team helping behaviors by way of enabling team interpersonal processes.

The linear SEM model for H1 and H2 displayed marginal fit indices, $\chi^2(207, N = 89) = 419.52, p < .01$; CFI = .91; RMSEA = .11. Figure 4.1 shows the parameter estimates for H1 and H2. I included team size and team tenure as control variables in the model, but omitted them from the figure for parsimony. As predicted in H1, team task-focused leadership positively and significantly ($p < .01$) predicted task-related processes, which then predicted team performance ($p < .01$). However, individual task-focused and subgroup task-focused leadership did not significantly predict task-related processes, nor did task-related processes significantly predict team helping behaviors. Similarly, as predicted in H2, team person-focused leadership positively and significantly ($p < .05$) predicted interpersonal processes, which then positively and significantly predicted team helping behaviors ($p < .01$). Contrary to expectations, subgroup person-focused leadership negatively and significantly predicted interpersonal processes. Individual person-focused leadership did not predict interpersonal processes and interpersonal processes did not predict team task performance.

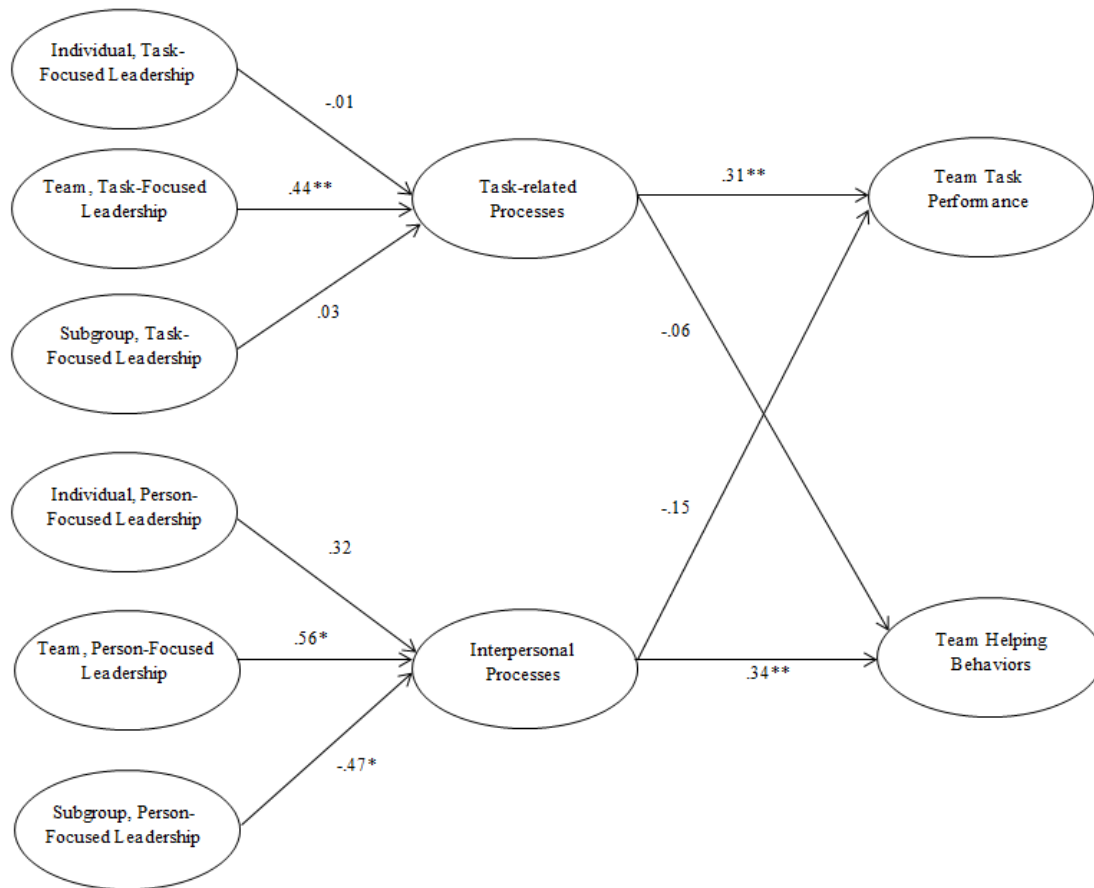


Figure 4.1. SEM model for Hypotheses 1 and 2. * $p < .05$, ** $p < .01$

To further examine whether team task-focused and team person-focused influenced team effectiveness outcomes by way of task-related processes and interpersonal processes, respectively, I created two additional nested models to provide a test of the mediational values (James & Brett, 1984). First, I created a more inclusive model featuring direct paths between the exogenous variables (i.e., leader focus) and endogenous variables (i.e., team task performance and team helping behaviors). Second, I created a model that eliminated all paths leading to, and stemming from, the two

mediating team process variables. Examining the nested comparisons between the first, more inclusive model and the second, less inclusive model provides a test of the value of the mediating mechanisms. A key assumption in these comparisons is that the leader focus and team outcome variables display significant relationships in the latter model in order to meet the precondition of mediation (cf. Baron & Kenny, 1986; James & Brett, 1984).

The first model displayed similar fit indices to the hypothesized model, $\chi^2(195, N = 89) = 401.58, p < .01$; CFI = .92; RMSEA = .11, and was not a significant improvement over the hypothesized model. Further, with both direct and indirect effects included, interpersonal processes still mediated the relationship between team person-focused leadership and team helping. However, the mediating role of task processes in the relationship between team task-focused and team performance relationship became non-significant. The second model, which eliminated the paths to and from the team process variables but left them in the overall model, displayed poorer fit than both the hypothesized model as well as the more inclusive baseline model, $\chi^2(205, N = 89) = 451.20, p < .01$; CFI = .90; RMSEA = .12. Further, the precondition of significant relationships between the leader focus variables and team outcome variables to justify mediation was not met. Thus, using the procedures outlined by Baron and Kenny (1986) as well as James and Brett (1984), the significant mediational value of task processes and interpersonal processes on the leader focus-team task performance and team helping behavior relationships was not confirmed.

Although mediation was not confirmed in the previous steps, more modern research suggests that a total effect between primary predictors and outcomes is not a necessity for estimating indirect effects (e.g., Cerin & MacKinnon, 2009; Collins, Graham, & Flaherty, 1998; Hayes, 2009; Rucker, Preacher, Tormala, & Petty, 2011; Zhao, Lynch, & Chen, 2010). Addressing this suggestion, I conducted the joint significance test and the product of coefficients test using PRODCLIN (MacKinnon, Fritz, Williams, & Lockwood, 2007) to examine the significance of the mediated effects. PRODCLIN produces asymmetric confidence intervals for the indirect effect and hence has more accurate Type I error rates and more power than other commonly-used tests (i.e., Sobel test; Edwards & Lambert, 2007; MacKinnon et al., 2007).

When examining the indirect effect of team task-focus on team task performance by way of task processes, results revealed that the effect was significant and displayed asymmetric 95% CIs that excluded zero (95% CIs were [.03, .31]). Therefore, H1 was partially supported. When examining the indirect effect of team person-focus on team helping behaviors via interpersonal processes, results revealed a significant effect with asymmetric 95% CIs excluding zero (95% CIs were [.03, .46]). Similarly, results also revealed a significant indirect effect for subgroup person-focused leadership on team helping behaviors (95% CIs were [-.38, -.02]), although this relationship was not in the expected direction. Thus, H2 was partially supported.

Table 4.2

Results of OLS Regression Models with Task-Related Processes

	<i>Model 1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Intercept	5.32**	5.32**	5.32**	5.33**	5.31**	5.33**	5.32**	5.32**	5.33**	5.30**
Team Size	.10 [†]	.10 [†]	.06	.06	.05	.05	.06	.06	.06	.08
Team Tenure	.07	.03	.02	.02	.00	.00	.02	.02	.02	-.02
Individual Task-Focused		-.05	.00	.00	-.03	-.05	-.01	.00	.01	-.03
Team Task-Focused		.03	.02	.03	.02	.03	.02	.02	.02	.00
Subgroup Task-Focused		.15	.13	.13	.17	.18	.14	.12	.12	.19
Individual Person-Focused		.29*	.26 [†]	.27 [†]	.28*	.31*	.26 [†]	.26 [†]	.26 [†]	.19
Team Person-Focused		.10	.02	.02	.01	.02	.04	.02	.01	.09
Subgroup Person-Focused		-.20	-.13	-.14	-.13	-.18	-.15	-.13	-.13	-.10
Task Interdependence			.14*	.14*	.16*	.14*	.14*	.14*	.14*	.13*
Individual Task-Focused X Task Interdependence				.02						-.33**
Team Task-Focused X Task Interdependence					.09 [†]					.17
Subgroup Task-Focused X Task Interdependence						.09 [†]				.22*
Individual Person-Focused X Task Interdependence							.02			.19
Team Person-Focused X Task Interdependence								.00		-.22
Subgroup Person-Focused X Task Interdependence									-.01	-.01 [†]
R^2	.06 [†]	.32**	.36*	.36**	.38**	.39**	.36**	.36**	.36**	.46*
ΔR^2	--	.26**	.04**	.00	.02 [†]	.03 [†]	.00	.00	.00	.10
F	2.57 [†]	4.71**	5.00**	4.46**	4.85**	4.94**	4.47**	4.44**	4.44**	4.21**

Note. $N = 89$; **: $p < .01$; *: $p < .05$; [†]: $p < .10$; All independent variables were standardized.

Table 4.3
Results of OLS Regression Models with Interpersonal Processes

	<i>Model 1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Intercept	5.67**	5.67**	5.67**	5.66**	5.66**	5.67**	5.67**	5.68**	5.67**	5.67**
Team Size	.05	.06	.00	.01	.00	.00	.00	.00	.00	.03
Team Tenure	.07	.02	.01	.02	.00	-.01	.01	.01	.01	-.01
Individual Task-Focused		-.14	-.05	-.05	-.06	-.09	-.05	-.03	-.04	-.09
Team Task-Focused		.03	.01	.01	.01	.02	.02	.02	.01	.03
Subgroup Task-Focused		.07	.04	.03	.05	.07	.02	.01	.02	.08
Individual Person-Focused		.19	.14	.13	.15	.18	.14	.13	.13	.07
Team Person-Focused		.26	.13	.13	.12	.13	.10	.11	.11	.17
Subgroup Person-Focused		-.21	-.09	-.08	-.09	-.13	-.08	-.08	-.07	-.07
Task Interdependence			.22**	.22**	.23**	.22**	.22**	.22**	.22**	.20**
Individual Task-Focused X Task Interdependence				-.03						-.39**
Team Task-Focused X Task Interdependence					.03					.17
Subgroup Task-Focused X Task Interdependence						.06				.25**
Individual Person-Focused X Task Interdependence							-.03			.12
Team Person-Focused X Task Interdependence								-.04		-.30 [†]
Subgroup Person-Focused X Task Interdependence									-.03	.12
R^2	.03	.25**	.34**	.35**	.35**	.35**	.35**	.35**	.35**	.45**
ΔR^2	--	.22**	.09**	.01	.01	.01	.01	.01	.01	.11*
F	1.17**	3.28**	4.59**	4.13**	4.12**	4.27**	4.12**	4.17**	4.11**	3.91**

Note. $N = 89$; **: $p < .01$; *: $p < .05$; [†]: $p < .10$. All independent variables were standardized.

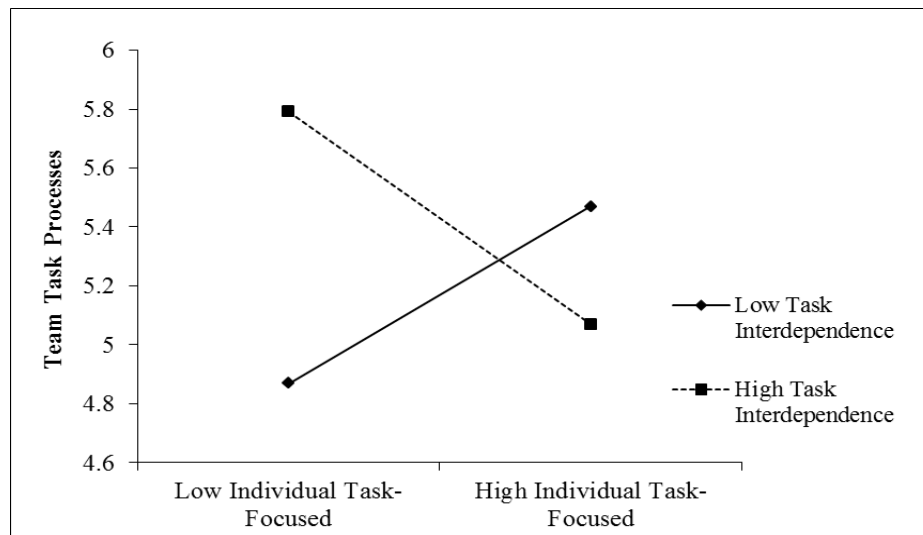


Figure 4.2. Plot of two-way interaction between individual task-focused leadership and task interdependence on team task processes

H3 posited that task interdependence would moderate the relationships between the various leader focus constructs and team processes, such that team-focused and subgroup-focused leadership would have more positive relationships when task interdependence was high, whereas individual-focused leadership would have more positive relationships when task interdependence was low. To test the moderating hypotheses, I first entered the control variables into the equation (step 1), then the leader focus variables (step 2), then task interdependence (step 3), and finally the interaction terms (step 4). Because the hypothesized model argued that the leader foci operate in a single model (i.e., not independently from one another), the first set of tests included all of the leader focus X task interdependence interaction terms in a single model. Each of

the dependent variables (e.g., team task processes and team interpersonal processes) was examined independently from one another.

The results of these test are displayed in column 10 of Table 4.2 (DV = Task Processes) and Table 4.3 (DV = Interpersonal Processes). As hypothesized in H3A, the relationship between individual task-focused leadership and task processes was significantly moderated by task interdependence ($\beta = -.33, p < .01$). Similarly, the relationship between subgroup task-focused leadership and task processes was also significantly moderated by task processes (H3C; $\beta = .22, p < .05$). None of the interaction terms proposed in H3B, H3D, H3E, and H3F were significant.

To further investigate the nature of the significant relationships proposed in H3A and H3C, the interactions were plotted and the simple slopes tested using the procedures outlined by Aiken and West (1991). Using these procedures, low and high values of the moderating variable were plotted at one standard deviation below and above the mean, respectively. As expected the relationship between individual task-focused leadership and task processes was positive and significant when task interdependence was low ($\beta = .30, p < .05$), but negative and significant when task interdependence was high ($\beta = -.36, p < .05$). Thus, H3A was supported. A graphical depiction of this relationship is seen in Figure 4.2.

Similarly, as expected in H3C, the relationship between subgroup task-focused leadership and task processes was positive and significant when task interdependence was high ($\beta = .41, p < .05$). This relationship was slightly negative, albeit non-significant, when task interdependence was low ($\beta = -.03, ns$). Thus, in line with the

notion that subgroup task-focused leadership has a stronger relationship with task processes when task interdependence is high, H3C is supported. A graphical depiction of this relationship is seen in Figure 4.3.

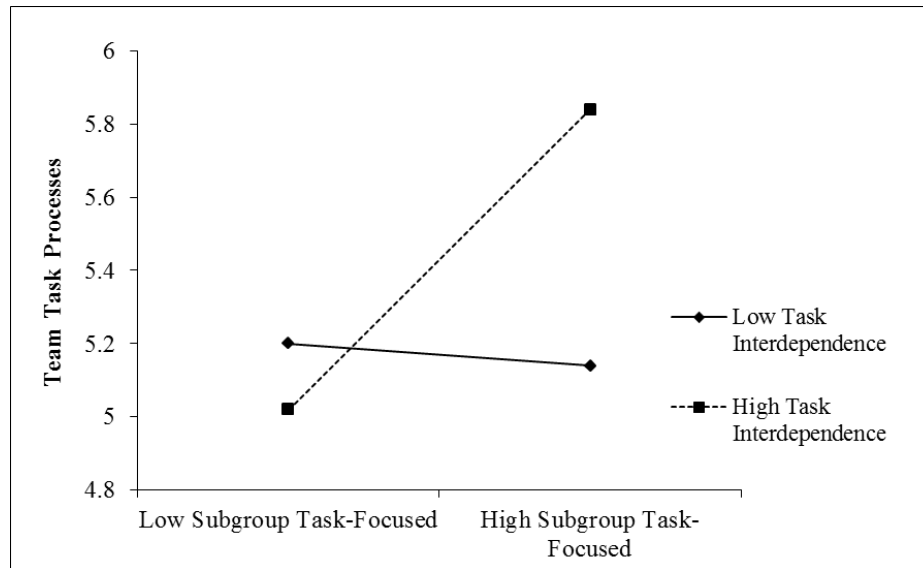


Figure 4.3. Plot of two-way interaction between subgroup task-focused leadership and task interdependence on team task processes

Interestingly, and outside of the hypothesized relationships, the individual task-focused leadership X task interdependence and subgroup task-focused leadership X task interdependence interaction terms each significantly predicted interpersonal processes when controlling for other variables (individual task-focused X task interdependence: $\beta = -.39, p < .01$; subgroup task-focused leadership X task interdependence: $\beta = .25, p < .05$). An analysis of the simple slopes revealed that the relationship between individual task-focused leadership and interpersonal processes is negative and significant when task

interdependence is high ($\beta = -.48, p < .01$), but not significant when task interdependence is low ($\beta = .30, ns$). This relationship can be seen in Figure 4.4.

Concerning the relationship between subgroup task-focused leadership and interpersonal processes, the relationship was positive and significant when task interdependence was high ($\beta = .33, p < .05$), but not significant when task interdependence was low ($\beta = -.16, ns$). This relationship can be seen in Figure 4.5. Thus, although these relationships were not formally hypothesized, they support the overall notion that task interdependence interacts with a leader's entity focus to predict team processes.

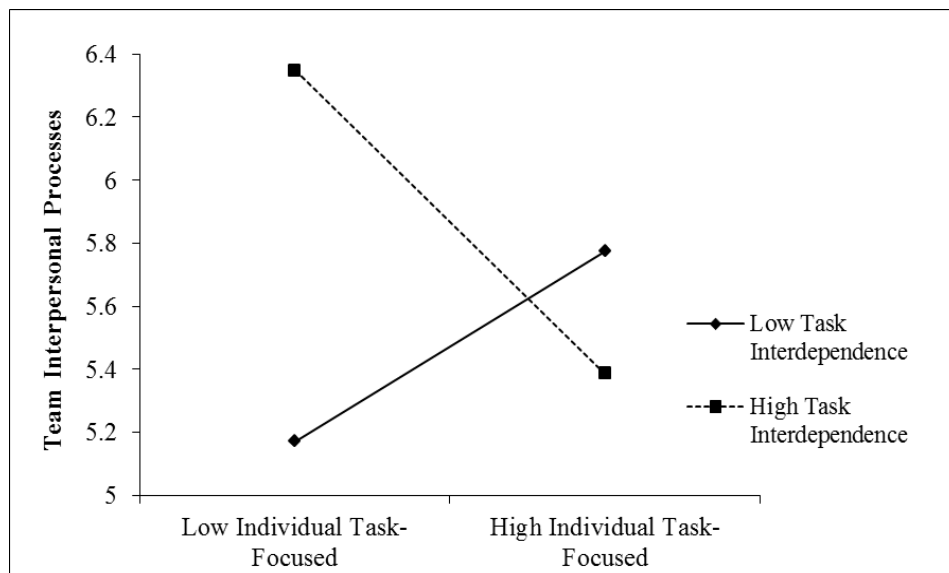


Figure 4.4. Plot of two-way interaction between individual task-focused leadership and task interdependence on team interpersonal processes

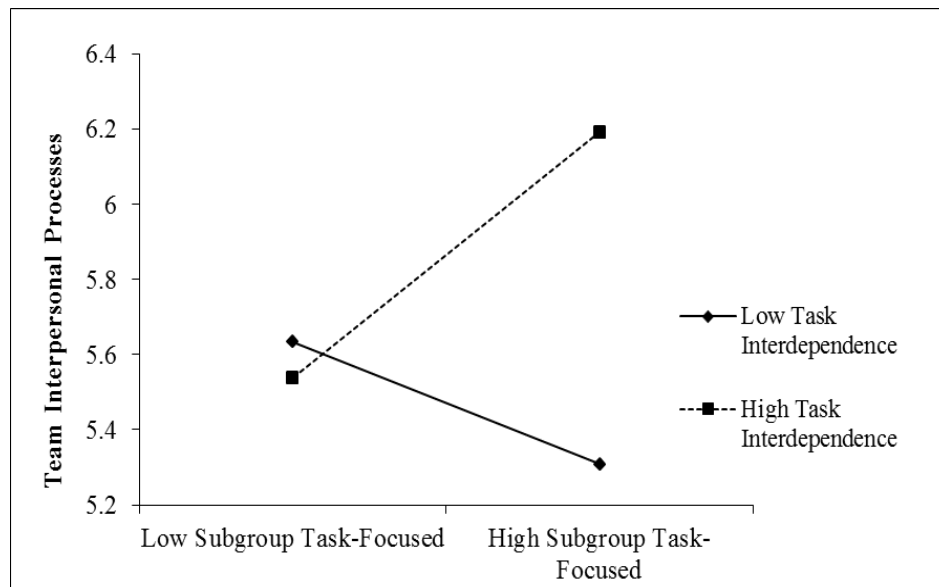


Figure 4.5. Plot of two-way interaction between subgroup task-focused leadership and task interdependence on team interpersonal processes

Although several significant interaction terms were detected in the full model discussed above, past work has noted the difficulty in finding multiple significant interaction terms in a single regression model (Aguinis, 2004; Swider, Barrick, Harris, & Stoverink, 2011). This suggests that the tests of H3 described above may have been too rigorous to detect all of the interaction terms. To address this possibility, I further explored the moderating influence of task interdependence by following the recommendations offered by Aguinis (2004) for testing multiple two-way interactions. Specifically, I assessed whether the change from a model with first-order effects (the main effects of the control variables, the six leader focus constructs, and task interdependence) to the model including all two-way interactions was statistically significant. For team task processes, results indicated that moving from the model

including only first-order effects to the model including the higher-order effects yielded a significant increase in R^2 ($\Delta R^2 = .10, p < .05$). Similarly, for team interpersonal processes, results indicated that moving from the model including only first-order effects to the model including the higher-order effects produced a significant increase in R^2 ($\Delta R^2 = .11, p < .05$).

After confirming that all of the 2-way interaction terms collectively explained significant variance beyond the main effects and control variables, I then tested each of the interaction terms individually (all control variables and main effects remained in the model). Results from the tests concerning each of the unique leader focus X task interdependence interactions as predictors of task-related processes and interpersonal processes are presented in columns 4-9 of Table 4.2 and Table 4.3, respectively. The additional analyses failed to yield any additional support for H3, suggesting that each of the leader foci must be accounted for to see the significant interactions between leader focus and task interdependence. In sum, H3 was only partially supported.

Because the tests of H1 and H2 revealed that team processes did not mediate all of the relationships between the leader focus constructs and the team effectiveness outcomes, I also sought to examine task interdependence as a moderator in the leader focus-team effectiveness relationships (i.e., the direct effects). To conduct these tests, I followed the same procedures described in the formal test of H3. Results regarding the interactions between leader focus and task interdependence as predictors of team task performance and team helping behaviors are presented Table 4.4 and Table 4.5, respectively.

Table 4.4
Results of OLS Regression Models with Team Task Performance

	Model 1	2	3	4	5	6	7	8	9	10
Intercept	4.66**	4.66**	4.66**	4.67**	4.64**	4.66**	4.64**	4.62**	4.65**	4.61**
Team Size	-.11	-.11	-.12	-.14	-.14	-.12	-.12	-.12	-.12	-.17
Team Tenure	.03	.13	.12	.10	.08	.12	.11	.12	.12	.09
Individual Task-Focused		.35	.36	.33	.31	.34	.33	.30	.30	.32
Team Task-Focused		.47*	.47*	.47*	.46*	.47*	.45*	.45*	.47*	.48*
Subgroup Task-Focused		-.54*	-.55*	-.51 [†]	-.48 [†]	-.52 [†]	-.51 [†]	-.49 [†]	-.49 [†]	-.53*
Individual Person-Focused		-.40	-.40	-.34	-.36	-.38	-.39	-.36	-.35	-.38
Team Person-Focused		.09	.07	.05	.05	.07	.13	.12	.12	-.04
Subgroup Person-Focused		.47 [†]	.48 [†]	.43	.49 [†]	.46	.45	.44	.41	.61 [†]
Task Interdependence			.03	.04	.05	.03	.03	.03	.02	.09
Individual Task-Focused X Task Interdependence				.11						.08
Team Task-Focused X Task Interdependence					.14					.53 [†]
Subgroup Task-Focused X Task Interdependence						.04				-.50*
Individual Person-Focused X Task Interdependence							.08			-.25
Team Person-Focused X Task Interdependence								.11		-.07
Subgroup Person-Focused X Task Interdependence									.11	.44
R^2	.01	.22**	.22*	.23*	.24*	.22*	.22*	.23*	.23*	.28*
ΔR^2	--	.21**	.00	.01	.02	.00	.00	.01	.01	.06
F	.52	2.78**	2.44*	2.29*	2.40*	2.19*	2.24*	2.31*	2.28*	1.93*

Note. $N = 89$; **: $p < .01$; *: $p < .05$; [†]: $p < .10$. All independent variables were standardized.

Table 4.5
Results of OLS Regression Models with Team Helping Behaviors

	<i>Model 1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Intercept	5.80**	5.80**	5.80**	5.78**	5.84**	5.79**	5.83**	5.86**	5.82**	5.86**
Team Size	.19 [†]	.20 [†]	.19 [†]	.22*	.22*	.20 [†]	.18	.18	.19 [†]	.22 [†]
Team Tenure	.07	.03	.03	.08	.10	.08	.05	.04	.04	.08
Individual Task-Focused		-.30	-.28	-.22	-.20	-.16	-.25	-.21	-.21	-.16
Team Task-Focused		-.06	-.06	-.08	-.04	-.08	-.04	-.04	-.07	-.04
Subgroup Task-Focused		.31	.30	.23	.18	.17	.25	.22	.24	.16
Individual Person-Focused		-.04	-.05	-.18	-.12	-.18	-.06	-.11	-.11	-.18
Team Person-Focused		.55 [†]	.53 [†]	.57 [†]	.56 [†]	.53 [†]	.44	.46	.47	.57 [†]
Subgroup Person-Focused		-.34	-.32	-.21	-.32	-.20	-.26	-.25	-.23	-.29
Task Interdependence			.04	.01	-.01	.03	.04	.03	.04	-.01
Individual Task-Focused X Task Interdependence				-.22*						-.07
Team Task-Focused X Task Interdependence					-.26*					-.18
Subgroup Task-Focused X Task Interdependence						-.21*				.01
Individual Person-Focused X Task Interdependence							-.12			.11
Team Person-Focused X Task Interdependence								-.16		-.21
Subgroup Person-Focused X Task Interdependence									-.14	.04
<i>R</i> ²	.05	.15 [†]	.15	.19 [†]	.21*	.20 [†]	.16	.18	.16	.22
ΔR^2	--	.10	.00	.04*	.06*	.05*	.01	.03	.01	.07
<i>F</i>	.52	2.78 [†]	2.44	1.87 [†]	2.11*	1.91 [†]	1.52	1.65	1.40	1.93

Note. *N* = 89; **: *p* < .01; *: *p* < .05; [†]: *p* < .10. All independent variables were standardized.

When all control variables, main effects, and interaction terms were entered into a single regression model, only subgroup task-focused leadership significantly interacted with task interdependence to predict team task performance ($\beta = -.50, p < .05$; column 10 of Table 4.4). Using the procedures outlined by Aiken and West (1991), the relationship between subgroup task-focused leadership and team task performance was negative and significant when task interdependence was high ($\beta = -.98, p < .05$), but not significant when task interdependence was low ($\beta = -.03, ns$). This relationship is depicted in Figure 4.6.

When all control variables, main effects, and interaction terms were entered into a single regression model to predict team helping behaviors (e.g., column 10 of Table 4.5), none of the interaction terms were significant predictors of team helping behaviors. Further, because the interaction terms did not explain significant variance over and above the main effects (team task performance: $\Delta R^2 = .06, ns$; team helping behaviors: $\Delta R^2 = .07, ns$), I deemed it inappropriate to examine or interpret the individual interaction tests presented in columns 4-9.

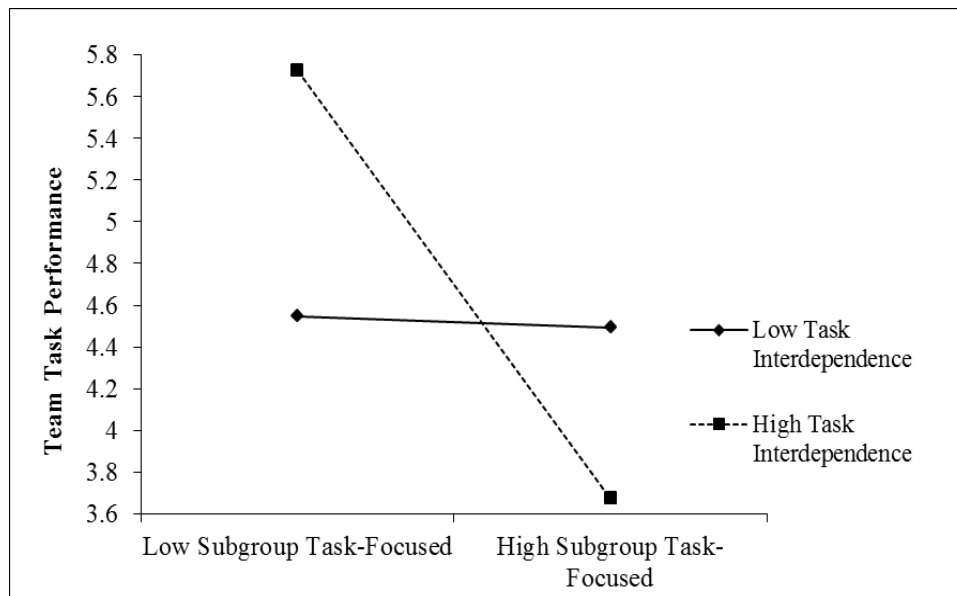


Figure 4.6. Plot of two-way interaction between subgroup task-focused leadership and task interdependence on team task performance

Finally, Hypothesis 4 predicted a first stage moderated mediation model of task interdependence on the relationships between leader focus and team outcomes (i.e., team task performance and team helping behaviors) via team processes. That is, the interaction between leader focus and task interdependence should influence team task performance and team helping behaviors indirectly through team processes. To justify testing H4, two conditions were required: (1) confirming a significant interaction between the leader focus variables and task interdependence on team processes and (2) detecting the mediating role of team processes in the relationship between leader focus and final outcome variables (i.e., team task performance and team helping behaviors).

Previous hypothesis tests revealed mixed results for the mediating and moderating effects. Specifically, the test of H1 indicated an indirect effect of team task-focused leadership on team task performance by way of task processes. Similarly, results

of H2 indicated indirect effects for the team person-focused and subgroup person-focused leadership on team helping behaviors by way of interpersonal processes. However, tests of H3 revealed that the interaction between team task-focus and task interdependence did not significantly predict task processes, nor did the interactions between team person-focused and subgroup person-focused leadership with task interdependence predict interpersonal processes. Thus, the preconditions for testing mediated moderation were not met and, consequently, H4 was not supported².

² Despite the paucity of support offered in the previous hypothesis testing, I examined the conditional indirect effects proposed in H4 using the procedures outlined by Preacher, Rucker, & Hayes (2007). Based on results generated by the SPSS PROCESS macro (model 8; Hayes, under review), results indicated no significant conditional indirect effects. Thus, consistent with my initial conclusions, H4 was not supported in the current sample.

CHAPTER V

SUMMARY & CONCLUSION

5.1 Chapter Summary

In the previous chapters, I proposed and tested a theoretical model aimed at offering a clearer understanding of team leadership. The purpose of the current chapter is to assess what this dissertation contributes to the theorizing about team leadership. To begin, I offer a general discussion of the findings in this study, noting several key issues surrounding the empirical tests. Second, I move beyond the explicit hypotheses testing conducted in the previous chapter to offer additional insights found from exploratory analyses of the data. In particular, I identify statistical relationships that suggest the theory behind the hypothesized model may offer more promise for understanding team leadership than the initial results indicate. Next, I note several theoretical and practical implications of the current study, focusing on what the current dissertation reveals beyond what is already known. I follow implications with a brief discussion regarding the methodological limitations of this study and the most promising future research endeavors that may stem from this work. Finally, I offer general concluding remarks.

5.2 General Discussion

In an attempt to integrate the powerful theoretical tenets of functional team leadership theory with the specificity of traditional leadership approaches, I hypothesized that multiple leader foci would interact with task interdependence to predict team processes and, indirectly, team task performance and team helping

behaviors. I argued that leader focus falls along two main dimensions: First, a leader's focus can be directed toward teamwork or taskwork (i.e., person-task focus). Person-focused leadership, I argued, should predict team outcomes indirectly through team interpersonal processes. Task-focused leadership, on the other hand, should predict team outcomes by way of team task processes. Second, a leader's focus may also be directed toward individuals within the team, the team as a whole, and subgroups within the team. I argued that each of these three entities would interact with task interdependence to predict team processes. Specifically, individual-focused leadership would display positive relationships with team processes when task interdependence was low; subgroup- and team-focused leadership would display positive relationships with team processes when task interdependence was high. In total, I argued that team leadership could be better understood by accounting for six unique foci of team leadership (i.e., individual task-focus, team task-focus, subgroup task-focus, individual person-focus, team person-focus, and subgroup person-focus) and the situational contingency of task interdependence.

Indeed, in the first empirical examination of the multi-foci model of team leadership, I found notable support for the hypothesized arguments. Based on results from 89 fire crews, team task-focus, team person-focus, and subgroup person-focus each influenced team outcomes indirectly through team processes. Further, individual task-focus and subgroup task-focus each interacted with task interdependence to predict team processes in the expected direction. In total, these supportive findings offer an optimistic view of the multi-foci model of team leadership: Different foci do, in fact, predict

different sets of team processes and, moreover, these relationships are contingent on task interdependence. Although the supportive findings are exciting, it is also important to recognize that the hypothesized model was not fully supported. This suggests the need for additional theorizing and/or empirical investigation. I offer my initial thoughts below.

Given the novelty of the multi-foci model of team leadership, an implicit, albeit extremely critical, hypothesis inherent to the current study was that leaders can and do differentiate between foci and, related, that their followers are able to detect meaningful differences in their leader's focus across the six categories. Results suggest mixed support for this implicit hypothesis. The person-task focus distinction stems from classical leadership research (e.g., Bales, 1954; Blake, Mouton, & Bidwell, 1962; Stogdill, 1950) and has been addressed in literally hundreds of studies over the past several decades (see Judge, Piccolo, & Illies, 2004 for examples), particularly at the individual level of analysis. Moreover, recent meta-analytic findings have supported the validity of the person-task distinction (e.g., Burke et al., 2006; Judge et al., 2004). In line with prior conclusions, the current study supports the notion that leaders do make meaningful differentiations between person- and task-focused behaviors. Although correlations were significant and fairly strong (r ranging from .49 to .61 depending on entity), they were below the threshold used to defend other correlated but distinct relationships in the literature (e.g., Colquitt, 2001). Thus, the assumption that leaders differentiate between person- and task-focus was supported.

As for the entity focus construct, which is the most novel contribution of my dissertation, the picture is not as clear. Once again, correlations among the different entities were positive and significant. In some cases, the high correlations were still within the acceptable range to justify distinct, non-redundant constructs (e.g., individual task-focused and team task-focused foci were correlated at $r = .69$; team task-focused and subgroup task-focused were correlated at $r = .69$). In other cases, especially regarding the person-focused constructs, correlations between entities were very high ($r > .80$), suggesting a great deal of redundancy. However, there are some well-founded theoretical and statistical reasons to question whether the correlational statistics yield the complete story. Whereas person-task focus was measured using distinct items for person-focused and task-focused leadership, I measured different entity foci by asking respondents to rate each person-focused and task-focused behavior in a column corresponding to the different entities (i.e., one column for individual ratings, one column for team ratings, and another for subgroup ratings). Thus, because the same items were used for all three entities, there was likely a common method component that at least partially contributed to the high correlations across entities. To address this issue from a statistical perspective, I correlated corresponding error terms in the confirmatory factor analyses (CFA) and structural path models (Bollen, 1989; Brown, 2006; Kline, 2005; Marsh & Grayson, 1995).

Indeed, based on a sample of 461 undergraduate students, a CFA provided support for the notion that team members can and do distinguish between the six proposed leader foci after accounting for the common method component. Similarly,

using the same procedures, a six factor model was supported in a sample of 384 firefighters at the individual level. However, when entered into a structural path model at the team-level ($N = 89$), only team task-focus, team person-focus, and subgroup person-focus influenced team outcomes by way of team processes. Individual task-focus, subgroup task-focus, and individual person-focus did not significantly influence team processes.

There are a vast number of possibilities that could explain these findings. To be concise, I discuss what I perceive as the three most likely reasons. The first is theoretical. In hindsight, it makes conceptual sense that the team-focused leadership variables would be the primary predictors of team processes and, indirectly, team outcomes like team task performance and team helping behaviors. Individual-focused and subgroup-focused leadership may be better predictors of individual or subgroup outcomes.

A second possibility is simply that the sample size ($N = 89$) was not adequate enough to account for the number of parameters estimated in the structural model. This possibility is difficult to rule out, as accounting for measurement error, correlating a number of error terms, and specifying paths between 10 variables in a single model is statistically intensive and increases the necessary sample size for detecting significant results. However, the sample size in this study was larger than most team research studies (Shen, Kiger, Davies, Rasch, Simon, & Ones, 2011), and recent work has fit path models using similar methods with substantially smaller sample sizes ($N = 32$; Kirkman et al., 2011). Moreover, I took several steps to reduce the statistical burden, including

using item parcels for the leader focus variables and treating the mediating and outcome variables as non-latent constructs.

Finally, a third potential explanation stems from the compromising role of multicollinearity. Although multiple CFAs supported the discriminant validity between leader focus constructs and steps were taken to reduce common method problems in the structural models, the high correlations amongst the focus variables are hard to deny. Thus, it seems extremely likely that the leader focus variables explained much of the same variance in the team process and team outcome variables, leaving very little room for distinct effects. This may explain the volatile nature of the models tested as well as the theoretically contradictory path coefficients found (e.g., the significant and negative relationship between subgroup person-focused leadership and interpersonal processes). In further support of multicollinearity as a key suspect, a number of condensed and less intensive models were tested *post hoc*, but yielded similar non-supportive results. A key, unanswered question surrounding the multicollinearity issue regards whether the overlap between foci is due to a measurement problem (i.e., items were unclear or ineffective at detecting different foci), the inability of team members to make meaningful distinctions (i.e., members can only provide global assessments of leadership), or the leaders in this sample focused on all three entities consistently and relatively equally (i.e., the measurements were accurate, but there was no variance).

Based solely on these findings, one might question the promise of the multi-foci view of team leadership. However, in a closer inspection of the data, I found several meaningful clues in support of the model's theoretical underpinnings. Indeed, discarding

the theoretical model advanced in this dissertation based on one empirical test may be akin to “throwing the baby out with the bathwater.” An overview of the most notable supplemental findings is provided below.

5.3 Supplemental Analyses

Before beginning the data collection for this dissertation, I had a number of conversations with the participating fire departments to ensure that there was enough consistent variability in team task characteristics, namely task interdependence, to appropriately test the hypothesized model. In nearly every conversation, it was noted that although crews did a number of common tasks across teams, on average the type of work being done was different depending on the location of the fire station. Based on this information, I assumed, perhaps erroneously, that there would be more across-team variance than within-team variance in task characteristics. Thus, I reasoned that if most within-team tasks were generally similar, leaders would likely act in the same general way across all of these tasks. Ultimately, I presumed this would allow team members to clearly rate certain foci higher or lower than others. Therefore, the surveys solicited team members for their leader’s general tendencies without specifying a time frame or particular task set.

However, during the actual survey administration, a consistent, although not overwhelmingly common, comment made by team members was similar to “we do a lot of different things on a daily basis, so my leader focuses on all of the entities depending on the situation.” Realizing that this thinking, if widespread across respondents, may confound the discriminant validity of the leader focus constructs, I added two alternative

measures to subsequent surveys ($N = 74$ teams). These two scales measured the constructs of leader flexibility and “switching behaviors,” and were added to get a better understanding of whether leaders had the flexibility to change their focus and, if so, whether they could effectively do so across the different entity foci. With few exceptions (e.g., Barrow, 1976; Zaccaro, Foti, & Kenny, 1991; Zaccaro, Gilbert, Thor, & Mumford, 1991), leadership research has rarely acknowledged the role of leader flexibility and, moreover, to my knowledge no research has explored the role of switching across different entity foci. I address this gap below.

5.3.1 Leader Flexibility

I adapted the first scale, leader flexibility, from Jones, Rafferty, and Griffin's (2006) individual flexibility scale, which consisted of 10 items. Sample items include, “Our leader explores a wide variety of approaches to the team's problems”, “Our leader adapts his/her personal approach to the situation at hand”, and “Overall, given the work context, I would consider our leader to be a flexible person”. Separate assessments were made by team members and team leaders, with items being modified to address each respective source. Both team member and leader self-reports of flexibility displayed strong psychometric properties (team members: median $r_{wg} = .95$, $ICC_1 = .31$, $ICC_2 = .76$, $F = 4.21$, $p < .01$, $\alpha = .95$; team leaders: $\alpha = .87$).

Although the Jones et al. (2006) measure of flexibility does not explicitly address switching between leader foci, it does conceptually relate to several theoretically relevant constructs, namely proactive behavior (Bateman & Crant, 1993; 1999) and adaptability (Ashford, 1986). Thus, one could reasonably hypothesize that flexible

leaders would be the most likely to consider different foci in different circumstances and, in a context where teams conducted a wide variety of tasks, flexibility might positively predict important team outcomes. Indeed, member ratings of leader flexibility were positively and significantly related to team task processes ($r = .42, p < .01$), team interpersonal processes ($r = .47, p < .01$), team task performance ($r = .25, p < .05$) and team helping behaviors ($r = .25, p < .05$). Further, member ratings of leader flexibility were positively and significantly related to each of the six leader foci (r 's ranging from .32 to .66, $p < .01$), suggesting that the most flexible leaders might be the most likely to embrace each facet of leader focus.

Leader self-reports of flexibility positively and significantly related to team helping behaviors ($r = .42, p < .01$), but not team task processes ($r = .18, ns$), team interpersonal processes ($r = .18, ns$), or team task performance ($r = .091, ns$). Interestingly, leader self-reports displayed a non-significant relationship with member ratings of leader flexibility ($r = -.06, ns$). It is unclear why leader self-reports of flexibility do not align with member reports. However, it is clear that members who perceive that their leader is flexible tend to be on better performing teams.

Continuing the analysis of leader flexibility in a way consistent with the formal hypotheses of this dissertation, I conducted a series of regression analyses to determine (a) whether member ratings of leader flexibility influenced team task performance and team helping behavior by way of team processes and (b) whether the influence of leader flexibility was contingent on task interdependence. Because the general leader flexibility construct doesn't capture person-focused and task-focused leadership and yields no basis

for differentially predicting team task-related and interpersonal processes, processes were combined into a single team process factor (median $r_{wg} = .97$, $ICC_1 = .12$, $ICC_2 = .37$, $F = 1.60$, $p < .01$, $\alpha = .96$). To test the first *post hoc* hypothesis, which predicts the mediating role of team processes in the relationships between leader flexibility and team task performance and team helping behaviors, I used the mediation procedures described by Baron and Kenny (1986). Additionally, I conducted the joint significance test and the product of coefficients test using PRODCLIN (MacKinnon et al., 2007) to examine the significance of the mediated effects of leader flexibility on the team effectiveness outcomes. In line with the first set of informal hypotheses, leader flexibility was positively related to team processes ($\beta = .24$, $p < .01$) and team processes were positively related to team helping behaviors ($\beta = .26$, $p < .05$), but not team task performance, after controlling for leader flexibility. Further, the product of coefficient tests based on PRODCLIN demonstrated significant mediated effects of leader flexibility on team helping behaviors through team processes, producing a corrected 95% confidence interval of the mediated effect of $[.00, .12]$. Thus, it does appear that leader flexibility helps enable key team processes, which in turn influence team helping behaviors.

Concerning the second set of informal hypotheses, which argued that the influence of leader flexibility is contingent on task interdependence, I conducted a series of regression analyses to test whether the leader flexibility X task interdependence interaction term significantly predicted team processes, team task behavior, or team helping behavior. The leader flexibility X task interdependence interaction did not

significantly predict team processes, but did significantly predict team task performance ($\beta = .30, p < .05$) and team helping behaviors ($\beta = -.29, p < .05$).

In order to examine the form of the interactions, I plotted and evaluated the simple slopes using Aiken and West's (1991) procedures. Figure 5.1 shows that when task interdependence was higher, leader flexibility was positively and significantly related to team task performance. This relationship did not hold when task interdependence was low ($\beta = .51, p < .01$ versus $\beta = -.09, ns$). Thus, the strength and direction of the relationships supports the notion that leader flexibility is more important for team task performance when task interdependence is higher rather than lower. Unexpectedly, Figure 5.2 shows that when task interdependence was higher, leader flexibility was negatively and insignificantly related to team helping behaviors ($\beta = -.19, ns$), whereas than when task interdependence was lower leader flexibility was positively and significantly related to team helping behaviors ($\beta = .40, p < .01$). Thus, although it appears that task interdependence is an important moderator of the leader flexibility – team effectiveness relationships, the nature of these relationships is complex and requires more intensive investigation.

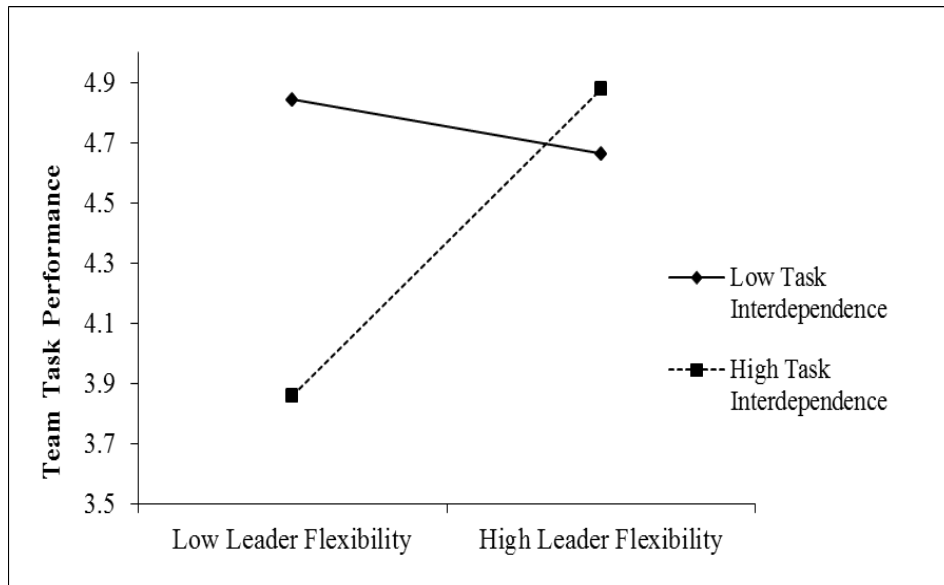


Figure 5.1. Plot of two-way interaction between leader flexibility and task interdependence on team task performance

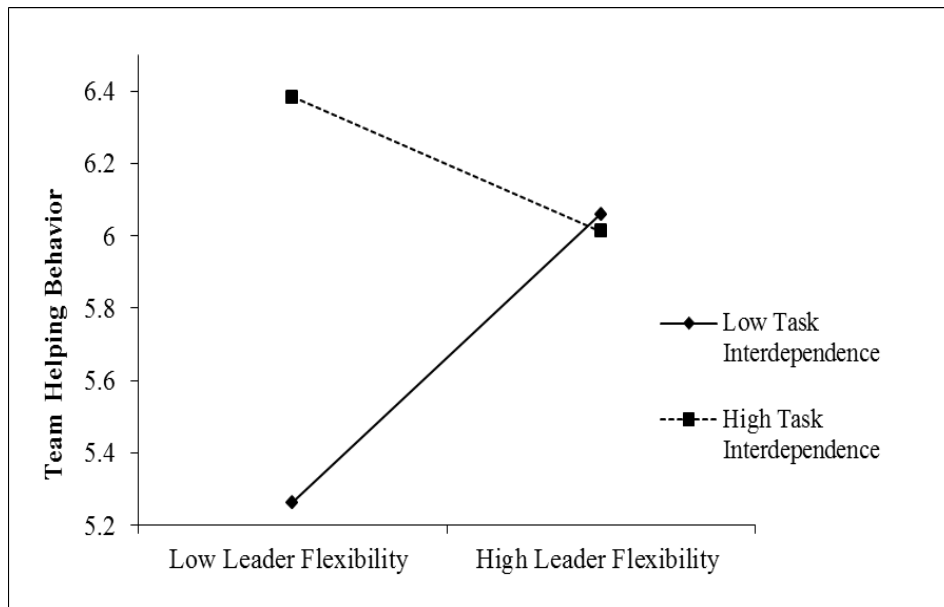


Figure 5.2. Plot of two-way interaction between leader flexibility and task interdependence on team helping behavior

5.3.2 *Leader Switching Behaviors*

As noted above, the leader flexibility construct arguably captures many common characteristics of leaders who are willing to switch their efforts to and from different foci. However, the leader flexibility measure does explicitly address whether leaders effectively switch their focus across the specific entities argued for in this dissertation. To address this omission, I created an original 5-item measure to capture the extent to which leaders effectively switched their focus across different entities. The items of this scale are: My leader is “able to move effortlessly between managing individuals on the team, the team as a whole, and subgroups within the team across different situations”, “Effectively switches his/her focus between individuals, the whole team, and subgroups within the team”, “Is effective at motivating individuals, the entire team, or subgroups within the team when the situation calls for it”, “Can seamlessly alternate his/her focus on individuals, the whole team, or subgroups within the team”, and “Is able to simultaneously balance the needs of individuals, the entire team, and subgroups within the team.” The measure displayed strong psychometric qualities (median $r_{wg} = .95$, $ICC_1 = .36$, $ICC_2 = .72$, $F = 3.55$, $p < .01$, $\alpha = .96$).

Because firefighters indicated that they encountered a wide array of tasks that likely required unique leader focus, I theorized that leader “switching” would provide an additional, and perhaps more appropriate, test of the overarching arguments made in this dissertation. As expected, leader switching was positively and significantly correlated with team processes ($r = .53$, $p < .01$), team task performance ($r = .23$, $p < .05$) and team helping behaviors ($r = .26$, $p < .05$). Following the supplemental analyses in the prior

paragraphs regarding leader flexibility, I ran a series of tests to examine whether team processes mediated the relationship between leader switching behaviors and team task performance and team helping behaviors. Further, I examined interactions between leader switching behaviors and task interdependence for moderated effects on team processes, team task performance, and team helping behaviors. Unlike the leader flexibility findings, however, the relationships between leader switching behaviors and important outcomes were not mediated by team processes and were not moderated by task interdependence.

However, leader switching behaviors did show some promise beyond simple correlational data. Specifically, when included in a regression model simultaneously with three other popular leadership constructs (e.g., transformational leadership, initiating structure, and consideration), leader switching behaviors explained a significant increase in variance team task performance over and above the other constructs ($\Delta R^2 = .08, p < .05$). In the context of the current sample, this finding supports the notion that researchers should consider different focal entities, especially when teams encounter a variety of different situations. Further, this finding also suggests that leadership should not be viewed as a “one-size-fits-all” set of behaviors directed toward a single entity (i.e., individuals or the team). Taken together with the formal hypotheses advanced in this dissertation, I have reason to believe there is untapped potential in the multi-foci model of team leadership.

5.4 Theoretical Implications

My dissertation sought to bridge the high-level theoretical power of functional team leadership theory with the specificity and prescriptiveness of other popular traditional leadership theories, specifically arguing that six areas of leader focus could be used to better predict team effectiveness across different situations. At the onset, my dissertation intended to make three primary contributions to the burgeoning area of team leadership research.

First, the conceptual development of the hypothesized model and subsequent empirical test answered calls to examine what exactly makes leaders functional in teams (Burke et al., 2006; Morgeson et al., 2010). Specifically, by introducing the multi-dimensional construct of leader focus, the hypothesized model took steps well beyond previous research in accounting for different types of leader interactions. Numerous researchers have argued that scholars must clearly distinguish between dyadic leader-member and collective leader-team interactions (Burke et al., 2006; Morgeson et al., 2010; Salas et al., 2004; Zaccaro et al., 2009), but the most common response is to simply discard dyadic interactions in lieu of collective interactions without acknowledging that both may be important in a team setting. Second, the hypothesized model addressed the sometimes overlooked role of situational contingencies (e.g., Fiedler, 1964; Hersey & Blanchard, 1969), integrating a critical team variable, task interdependence (Barrick et al., 2007; Burke et al., 2006; Morgeson et al., 2010) into a novel framework of team leadership. By including task interdependence, I expected that more predictive validity, and likewise more practical utility, could be obtained. A final

intended contribution centered around creating an empirically testable model of functional team leadership in the commonly accepted and easily adaptable IPO framework (LePine et al., 2008; Mathieu et al., 2008; Marks et al., 2001). In sum, the model's goal was to answer calls to embrace the complexity inherent in teams (Mathieu et al., 2008) by providing a parsimonious yet powerful lens for viewing and understanding team leadership.

Results from a pilot study offered preliminary support for the merits behind the multi-foci approach. Specifically, members were able to reasonably differentiate between the six leader foci. Similarly, in the first full empirical test of the model, I found partial support for the specific hypotheses offered in this dissertation. Task-focused leadership indirectly influenced team task performance through task processes and person-focused leadership influenced team helping behaviors by way of interpersonal processes. Moreover, the effect of individual task-focused and subgroup task-focused leadership on team processes was contingent on task interdependence. As hypothesized, the relationship between individual task-focused leadership and task processes was positive when task interdependence was low and negative when task interdependence was high. Further, the relationship between subgroup task-focused leadership and task processes was positive when task interdependence was high. Thus, building on the tenets of social interdependence theory, leaders might be best served to focus on individuals when members do not have a strong dependence on one another and focus on more collective entities when members are highly dependent on one another.

Adding to these promising results, supplemental analyses indicated even more support for a fundamental component of the model's theoretical framework. That is, in teams that experience a wide array of tasks and situations, flexible leaders that switch their focus across different entities may be more effective than those who do not. Given the meaningful findings and non-findings of this study, it is important to take stock of the theoretical implications.

The primary theoretical contribution offered in this dissertation concerns the construct of entity focus. After accounting for common methods, there does appear to be at least some discriminant validity between foci. Additionally, results suggested that the different foci display different mediated and moderated relationships with team processes and team outcomes. Related to this point, revelations from supplemental analyses indicated that leader switching behaviors may offer greater explanatory power than other commonly used leadership constructs (e.g., transformational leadership, initiating structure, consideration). Likewise, the theoretically related construct of leader flexibility not only showed significant main effect relationships with important team outcomes, but was also contingent on task interdependence. Taken together, these findings suggest that the theory behind the multi-foci model may provide a powerful lens for understanding team leadership. This is an important contribution as recent research has called for differentiating between dyadic and team-directed interactions (Burke et al., 2006; Morgeson et al., 2010; Salas et al., 2004; Zaccaro et al., 2009). Similarly, with few exceptions (e.g., Barrow, 1976; Zaccaro et al., 1991a; 1991b), research has generally overlooked flexibility as an important component of leadership.

In the context of functional leadership theory (McGrath, 1962), being able to switch foci may be a critical characteristic of functional leaders and, not to be understated, might provide a useful approach for answering calls regarding what specific leadership behaviors are functional in teams (Burke et al., 2006; Morgeson et al., 2010). Although the present study does not entirely solve the mystery of leader focus, it is the first to explicitly incorporate multiple entity foci into a single model. Recently, work by Kanter (2011) has taken a different, albeit promising approach to understanding leader focus. Specifically, she reasoned that effective leaders need to be able to “zoom” their perspective in and out to the appropriate focus in order to effectively address different situations. Zooming in helps foster individualized, personal relationships, whereas zooming out is better served for accomplishing larger strategic initiatives. In many ways, Kanter’s zoomed-in approach is at least partially analogous to the individual-focused variables, whereas zoomed-out leadership is more consistent with the arguments of team-focused leadership.

Kanter’s zooming perspective also has other analogs to the current study. For instance, just as the current model assumed leaders did not have the cognitive resources to focus on all three entities at the same time (resource allocation model; Kanfer & Ackerman, 1989), Kanter reasoned that it was impossible to zoom-in and zoom-out simultaneously. Although intuitive, the findings of the present study call into question this assumption. As noted in the discussion regarding multicollinearity, many of the leader focus variables were highly correlated. This might be explained by the fact that I asked respondents for a general rating of leader focus, which led to correlated answers

because most leaders focused on each of the entities at *some* time during the members' recollection. However, there is also the possibility that leaders simply can focus on all things all the time. Indeed, key assumption of the model must be questioned and reassessed before drawing definitive conclusions on the theoretical merit of the model.

5.5 Practical Implications

There are at least three meaningful takeaways that are useful for managers. First, in line with undoubtedly thousands of prior leadership studies, results are clear that some leadership is better than no leadership. That is, regardless of entity-focus, higher member ratings of both person-focused and task-focused behaviors were significantly associated with higher levels of team performance.

Second, there is at least some support for the idea that flexible leaders who can effectively switch their focus across individuals within the team, the team as a whole, and subgroups within the team generally have better performing teams. In fact, leader switching behaviors were able to explain significant variance above and beyond three other popular leadership measures. This suggests that potentially meaningful advances beyond one-size-fits-all leadership training may be possible.

Third, the present study offers some preliminary diagnostics for informing leaders when to focus on each foci. Task interdependence, in particular, appears to be a critical contingency. Individual-focused leadership may be most important when task interdependence is low, whereas subgroup-focused leadership appears to increase in importance when task interdependence is high. Additionally, the relationship between leader flexibility and team task performance was stronger and more positive when task

interdependence was high. Thus, some of the benefits of being flexible in their foci may be accentuated as “teamness” increases.

Importantly, team-focused leadership did not significantly interact with task interdependence to predict team processes or team performance. However, team-focused leadership did display significant relationships with team processes and team outcomes, which might suggest that leaders should always focus at least somewhat on the team, but supplement this focus with individual- and subgroup-focused leadership depending on the level of task interdependence.

Related, results suggest that leaders may want to prioritize different team outcomes when deciding on particular foci. Leaders seeking to improve task performance should focus on enabling team task processes, presumably by enacting task-focused leadership. However, leaders attempting to improve team helping behaviors might be better served to focus on enabling interpersonal processes, presumably by directing their efforts toward person-focused leadership. Thus, task interdependence and desired outcomes may both represent informative tools for prescribing specific leader foci.

Finally, despite the preliminary support for task interdependence as a key diagnostic tool for leaders, the current data make it difficult to inform practitioners of exactly *when* leaders must switch foci. However, leaders should understand that focusing on each of the different foci may be more or less effective depending on the situation (Kanter, 2011). Indeed, as Kanter (2011) suggests, when leaders are in a relatively stable, predictable environment, it may be more suitable to “zoom in” and focus on

individuals and other more fine-grained details. However, in uncertain times, leaders may be best served by “zooming out” and keeping the bigger, more collective issues in mind.

5.6 Limitations and Future Research

In this section I attempt to address the most important limitations of the current study and, somewhat related, identify the most promising areas of future research. One limitation concerns the sample used in this study. Firefighting crews are indeed teams and have been used in a number of organizational research studies (e.g., Bigley & Roberts, 2001; Colquitt et al., 2011; Pillai & Williams, 2004; Rico et al., 2008), but they have unique characteristics that may limit the generalizability of this study for several reasons. First, the firefighter crews in this study are not representative of common demographics. For example, participants in the present study were overwhelmingly white males (84% white, 96% male), so females and ethnic minorities were clearly underrepresented in this sample. Similarly, because this study was conducted in only two states in the southern United States, the findings may be limited to a particular region.

Second, unlike most traditional work teams, firefighters work 24-hour shifts and perform a wide variety of tasks, ranging from the most mundane to the most exotic. These characteristics cause many firefighters to view their fellow crewmen as “family” instead of simply coworkers. Given the lengthy shifts, sizable task breadth, and close ties, leaders in the fire service might be more accustomed to shifting across different foci more than a traditional corporate team leader who interacts with his or her team

members a few hours each week. Thus, different results might be found simply by investigating a different sample.

Third, as noted earlier, the present study solicited general leader ratings from team members. Several team members expressed having difficulties completing these rankings, arguing that their leader focused on different facets depending on the situation. Although assessing the exact severity of a limitation is difficult, this issue may have been a serious contributing factor in the multicollinearity issues mentioned above. As such, an extremely intriguing area of future research might solicit ratings based on specific situations that require low, moderate, and high task interdependence. A lab study, in which task interdependence can be manipulated, might be a better test of the model's utility. Similarly, observational research across different settings and leaders might yield more informative clues.

Beyond sample characteristics, there were also several general methodological issues that limited the current study. First, participants completed measures at a single time point. Thus, conclusions regarding causation or time must be rooted firmly in theory. In line with recent suggestions (Ployhart & Vandenberg, 2010), further research should measure the variables of interest at multiple points in time and employ methods such as time series analysis to examine how changes in leader focus operate over time and different situations. Second, although data were collected from three different sources (i.e., team members, team leaders, department chiefs), there is still some concern regarding common method variance. In particular, team members were asked to rate leader behaviors, team processes, and task interdependence. Although it makes

theoretical sense to measure each of these variables from team members, and a CFA supported the discriminant validity of the measures, there still exists the possibility that some aspects of the model were correlated due to single-source ratings.

Finally, to my knowledge this study was the very first attempt to measure leadership across three different entity foci (e.g., individuals, team, and subgroups). Although much effort was placed into developing the leadership measures, including a thorough literature review, subject matter expert consultation, and a pilot test, the measures displayed marginal discriminant validity. Given the promise found in the hypothesized model, the supplemental analyses, and new research on leader “zooming” (Kanter, 2011), the most obvious and potentially fruitful area of future research lies in identifying a more precise assessment of leader focus. In particular, qualitative and observational research may yield critical information regarding how leader efforts aimed at each of the three entities manifest themselves. Once a clearer picture of these manifestations is available, it might be possible to develop more pointed and discriminant survey items that better capture the leader focus dimensions. Indeed, finding a better measure of leader focus is imperative for gauging the hypothesized model’s true capability.

5.7 Conclusion

My dissertation attempted to provide a much needed model of team leadership. The hypothesized model argued that instead of exhausting lists of leader behavior types or frustratingly vague functional accounts, team leadership could best be understood and explained by six leader foci that interact with situational contingencies to predict team

processes and, ultimately, team effectiveness. Perhaps the most ambitious aspect of the model centered around a sub-dimension of leader focus, called entity focus, which was intended to capture whether leaders directed their efforts toward individuals on the team, the entire collective team, or subgroups nested within the team.

Although the specific hypotheses in this dissertation were guided by well-established theories and logic derived from personal and vicarious experience, the first full empirical test provided only partial support for the model. However, the data do support the overarching idea that the best leaders are those that are flexible and can switch their focus across different entities and, further, the benefits of focusing on different foci may be contingent upon situation contingencies like task interdependence. In this regard, and especially when considering the unique sample, it seems reasonable to conclude that the theoretical underpinnings of the new model warrant further investigation.

As a final point concerning this research project, I want to acknowledge that by the time this dissertation has been approved and signed by all committee members, properly formatted for print, and rubber-stamped by all of the required bureaucrats, it will have intensively consumed nearly two years of my life. I cannot wholeheartedly say this has been a “fun” process. As with anything that requires such tremendous effort, it is easy to be disappointed or at the very least humbled when results are not entirely consistent with one’s expectations. However, when research is viewed as a scientific process, it is also easy to be excited when one’s efforts yield new knowledge. By this account, I am certainly excited by the conclusions drawn from this dissertation. For

instance, in addition to all of the learning that stems from theorizing and testing a new model, there is now tangible evidence supporting some of the arguments inherent to the multi-foci view of team leadership. Thus, the real “fun” is only beginning.

REFERENCES

- Aguinis, H. (2004). *Regression analysis for categorical moderators*. New York: Guilford Press.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Alchian, A.A., & Demsetz, H. (1972). Production, information costs, and economic organization. *American Economic Review*, 62, 777-795.
- Alderfer, C.P. (1977). Group and intergroup relations. In J. R. Hackman & J. L. Suttle (Eds.), *Improving life at work* (pp. 227-296). Santa Monica, CA: Goodyear.
- Ancona, D.G., & Caldwell, D.F. (1990). Beyond boundary spanning: Managing external dependence in product development teams. *Journal of High Technology Management Research*, 1, 119-135.
- Ancona, D.G., & Caldwell, D.F. (1992). Bridging the boundary: External activity and performance in organizational teams. *Administrative Science Quarterly*, 37, 634-665.
- Antonakis, J., Avolio, B.J., & Sivasubramaniam, N. (2003). Context and leadership: An examination of the nine-factor full-range leadership theory using the multifactor leadership questionnaire. *Leadership Quarterly*, 14, 261-295.
- Antonakis, J., & House, R. (2002). An analysis of the full-range leadership theory: The way forward. In B.J. Avolio & F.J. Yammarino (Eds.), *Transformational and charismatic leadership: The road ahead* (pp. 3-34). Amsterdam: JAI Press.

- Arnold, K.A., Barling, J., & Kelloway, E.K. (2001). Transformational leadership or the iron cage: Which predicts trust, commitment and team efficacy? *Leadership & Organization Development Journal*, 22, 315-320.
- Ashford, S. (1986). The role of feedback seeking in individual adaptation: A resource perspective. *Academy of Management Journal*, 29, 465-487.
- Avolio, B., Bass, B., & Jung, D. (1995). *MLQ: Multifactor leadership questionnaire: Technical report*. Palo Alto, CA: Mind Garden.
- Avolio, B.J., Bass, B.M., & Jung, D.I. (1999). Re-examining the components of transformational and transactional leadership using the multifactor leadership questionnaire. *Journal of Occupational and Organizational Psychology*, 72, 441-462.
- Bales, R.F. (1950). *Interaction process analysis: A method for the study of small groups*. Reading, MA: Addison-Wesley.
- Bales, R.F. (1954). In conference. *Harvard Business Review*, 32, 44-50.
- Baron, R.M., & Kenny, D.A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Barrick, M.R., Bradley, B.H., Kristof-Brown, A.L., & Colbert, A.E. (2007). The moderating role of top management team interdependence: Implications for real teams and working groups. *Academy of Management Journal*, 50, 544-557.

- Barrow, J.C. (1976). Worker performance and task complexity as causal determinants of leader behavior style and flexibility. *Journal of Applied Psychology, 61*, 433-440.
- Bass, B.M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B.M. (1990). *Bass & Stogdill's handbook of leadership* (3rd ed.). New York: Free Press.
- Bass, B.M. (1997). Does the transactional–transformational leadership paradigm transcend organizational and national boundaries? *American Psychologist, 52*, 130-139.
- Bass, B.M., & Avolio, B. J. (1995). *MLQ: Multifactor leadership questionnaire*. Redwood City. CA: Mind Garden.
- Bass, B.M., & Avolio, B. J. (1997). *Full range leadership development: Manual for the multifactor leadership questionnaire*. Redwood City, CA: Mind Garden.
- Bass, B.M., Avolio, B.J., Jung, D.I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology, 88*, 207-218.
- Bateman, T.A., & Crant, M.J. (1993). The proactive component of organizational behavior. *Journal of Organizational Behavior, 14*, 103–118.
- Bateman, T.A. and Crant, M.J. (1999). Proactive behavior: Meaning, impact, recommendations. *Business Horizons, 42*, 63-71.
- Bell, B.S., & Kozlowski, S.W.J. (2002). A typology of virtual teams. *Group & Organization Management, 27*, 14-49.

- Bennis, W., & Nanus, B. (1985). *Leaders: The strategies for taking charge*. New York: Harper & Row.
- Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
- Bigley, G.A., & Roberts, K.H. (2001). The incident command system: High-reliability organizing for complex and volatile task environments. *Academy of Management Journal*, 44, 1281-1299.
- Blake, R.R., Mouton, J.S., & Bidwell, A.C. (1962). Managerial Grid. *Advanced Management - Office Executive*, 1, 12-15.
- Bliese, P.D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analyses. In K.J. Klein & S.W.J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 349-381). San Francisco, CA: Jossey-Bass.
- Bollen, K.A. (1989). *Structural equations with latent variables*. New York: Wiley.
- Brown, S.L., & Eisenhardt, K.M. (1995). Product development: Past research, present findings, and future directions. *Academy of Management Review*, 20, 343-378.
- Brown, T.A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Press.
- Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.

- Burke, C.S., Stagl, K.C., Klein, C., Goodwin, G.F., Salas, E., & Halpin, S.M. (2006). What type of leadership behaviors are functional in teams? A meta-analysis. *Leadership Quarterly*, 17, 288-307.
- Burns, J.M. (1978). *Leadership*. New York: Harper & Row.
- Campion, M.A., Medsker, G.J., & Higgs, A.C. (1993). Relations between work group characteristics and effectiveness: Implications for designing effective work groups. *Personnel Psychology*, 46, 823-847.
- Campion, M.A., Papper, E.M., & Medsker, G.J. (1996). Relations between work team characteristics and effectiveness: A replication and extension. *Personnel Psychology*, 49, 429-452.
- Cerin, E., & MacKinnon, D. P. (2009). A commentary on current practice in mediating variable analysis in behavioral nutrition and physical activity. *Public Health Nutrition*, 12, 1182-1188.
- Chen, G., Kirkman, B.L., Kanfer, R., Allen, D., & Rosen, B. (2007). A multilevel study of leadership, empowerment, and performance in teams. *Journal of Applied Psychology*, 92, 331-346.
- Cogliser, C.C., & Schriesheim, C.A. (2000). Exploring work unit context and leader-member exchange: A multi-level perspective. *Journal of Organizational Behavior*, 21, 487-511.
- Cohen, S.G., & Bailey, D.E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 23, 239-290.

- Cole, M.S., Walter, F., & Bruch, H. (2008). Affective mechanisms linking dysfunctional behavior to performance in work teams: A moderated mediation study. *Journal of Applied Psychology, 93*, 945-958.
- Collins, L.M., Graham, J.J., & Flaherty, B.P. (1998). An alternative framework for defining mediation. *Multivariate Behavioral Research, 33*, 295-312.
- Collins, B.E., & Guetzkow, H. (1964). *A social psychology of group processes for decision-making*. New York: Wiley.
- Colquitt, J.A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*, 386-400.
- Colquit, J.A., LePine, J.A., Zapata, C.P., & Wild, R.E. (2011). Trust in typical and high-reliability contexts: Building and reacting to trust among firefighters. *Academy of Management Journal, 54*, 999-1015.
- Conger, J.A. (1999). Charismatic and transformational leadership in organizations: An insider's perspective on these developing streams of research. *Leadership Quarterly, 10*, 145-179.
- Conger, J.A. (2004). Developing leadership capability: What's inside the black box? *Academy of Management Executive, 18*, 136-139.
- Conger, J.A., & Kanungo, R.N. (1987). Toward a behavioral theory of charismatic leadership in organizational settings. *Academy of Management Review, 12*, 637-647.

- Conger, J.A., & Pearce, C.L. (2003). A landscape of opportunities: Future research on shared leadership. In C.L. Pearce & J.A. Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership* (pp. 285-303). Thousand Oaks, CA: Sage.
- Cox, J.F., Pearce, C.L., & Perry, M.L. (2003). Toward a model of shared leadership and distributed influence in the innovation process: How shared leadership can enhance new product development team dynamics and effectiveness. In C.L. Pearce & J.A. Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership* (pp. 48-76). Thousand Oaks, CA: Sage.
- Dansereau, F., Cashman Jr, J., & Graen, G. (1973). Instrumentality theory and equity theory as complementary approaches in predicting the relationship of leadership and turnover among managers. *Organizational Behavior and Human Performance*, 10, 184-200.
- Dansereau, F., Graen, G., & Haga, W.J. (1975). A vertical dyad linkage approach to leadership within formal organizations: A longitudinal investigation of the role making process. *Organizational Behavior and Human Performance*, 13, 46-78.
- Day, D.V., Gronn, P., & Salas, E. (2004). Leadership capacity in teams. *Leadership Quarterly*, 15, 857-880.
- Day, D.V., Gronn, P., & Salas, E. (2006). Leadership in team-based organizations: On the threshold of a new era. *Leadership Quarterly*, 17, 211-216.
- DeChurch, L.A., & Mesmer-Magnus, J.R. (2010). The cognitive underpinnings of effective teamwork: A meta-analysis. *Journal of Applied Psychology*, 95, 32-53.

- Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations*, 2, 129-152.
- Dionne, S.D., Yammarino, F.J., Atwater, L.E., & Spangler, W.D. (2004). Transformational leadership and team performance. *Journal of Organizational Change Management*, 17, 177-193.
- Druskat, V.U., & Wheeler, J.V. (2003). Managing from the boundary: The effective leadership of self-managing work teams. *Academy of Management Journal*, 46, 435-457.
- Duchon, D., Green, S.G., & Taber, T.D. (1986). Vertical dyad linkage: A longitudinal assessment of antecedents, measures, and consequences. *Journal of Applied Psychology*, 71, 56-60.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44, 350-383.
- Edwards, J. R. & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, 12, 1-22.
- Fiedler, F. (1964). A contingency model of leadership effectiveness. *Advances in Experimental Social Psychology*, 1, 149-190.
- Fleishman, E.A., Mumford, M.D., Zaccaro, S.J., Levin, K.Y., Korotkin, A.L., & Hein, M.B. (1991). Taxonomic efforts in the description of leader behavior: A synthesis and functional interpretation. *Leadership Quarterly*, 2, 245-287.

- Fleishman, E.A., & Quaintance, M.K. (1984). *Taxonomies of human performance: The description of human tasks*. Orlando, FL: Academic Press.
- Gersick, C.J.G. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, 31, 9-41.
- Gersick, C.J.G. (1989). Marking time: Predictable transitions in task groups. *Academy of Management Journal*, 32, 274-309.
- Gerstner, C.R., & Day, D.V. (1997). Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, 82, 827-844.
- Gibb, C.A. (1947). The principles and traits of leadership. *Journal of Abnormal and Social Psychology*, 4, 267-284.
- Gibb, C.A. (1954). Leadership. In G. Lindzey (Ed.), *Handbook of social psychology* (pp. 877-920). Cambridge, MA: Addison-Wesley.
- Goodwin, V.L., Bowler, W.M., & Whittington, J.L. (2009). A social network perspective on LMX relationships: Accounting for the instrumental value of leader and follower networks. *Journal of Management*, 35, 954-980.
- Graen, G. (1976). Role making processes within complex organizations. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1201-1245). Chicago: Rand-McNally.
- Graen, G., & Cashman, J. (1975). A role-making model of leadership in formal organizations: A developmental approach. In J.G. Hunt & L.L. Larson (Eds.), *Leadership frontiers* (pp. 143-165). Kent, OH: Kent State University Press.

- Graen, G.B., Novak, M.A., & Sommerkamp, P. (1982). The effects of leader–member exchange and job design on productivity and satisfaction: Testing a dual attachment model. *Organizational Behavior & Human Performance*, 30, 109-131.
- Graen, G.B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 6, 219-247.
- Hackman, J.R. (1976). Group influences on individuals. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*. Chicago: Rand-McNally.
- Hackman, J.R. (1983). *A normative model of work team effectiveness* (Technical Report No. 2). New Haven, CT: Yale School of Organization and Management.
- Hackman, J.R. (1987). The design of work teams. In J.W. Lorsch (Ed.), *Handbook of organizational behavior* (pp. 315-342). Englewood Cliffs, NJ: Prentice Hall.
- Hackman, J.R. (2002). *Leading teams: Setting the stage for great performances*. Boston: Harvard Business School Press.
- Hackman, J.R., & Morris, C.G. (1975). Group tasks, group interaction process, and group performance effectiveness: A review and proposed integration. *Advances in Experimental Social Psychology*, 8, 45-99.
- Hackman, J.R., & Walton, R.E. (1986). Leading groups in organizations. In P.S. Goodman & Associates (Eds.), *Designing effective work groups* (pp. 72-119). San Francisco: Jossey-Bass.

- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76, 408-420.
- Henderson, D.J., Liden, R.C., Glibkowski, B.C., & Chaudhry, A. (2009). LMX differentiation: A multilevel review and examination of its antecedents and outcomes. *Leadership Quarterly*, 20, 517-534.
- Hersey, P., & Blanchard, K.H. (1969). Life cycle theory of leadership. *Training & Development Journal*, 2, 26-34.
- Hills, H. (2007). *Team-based learning*. Burlington, VT: Gower.
- Hirschhorn, L. (1991). *Managing in the new group environment: Skills, tools, and methods*. Lincoln, NE: Authors Choice Press.
- Hirst, G., & Mann, L. (2004). A model of R&D leadership and team communication: The relationship with project performance. *R&D Management*, 34, 147-160.
- Hogg, M.A., Abrams, D., Otten, S., & Hinkle, S. (2004). The social identity perspective: Intergroup relations, self-conception, and small groups. *Small Group Research*, 35, 246-276.
- Hooper, D.T., & Martin, R. (2008). Beyond personal leader-member exchange (LMX) quality: The effects of perceived LMX variability on employee reactions. *Leadership Quarterly*, 19, 20-30.
- House, R.J. (1971). A path goal theory of leader effectiveness. *Administrative Science Quarterly*, 16, 321-339.
- House, R.J. (1996). Path-goal theory of leadership: Lessons, legacy and a reformulated theory. *Leadership Quarterly*, 7, 323-352.

- House, R.J., & Dessler, G. (1974). The path-goal theory of leadership: Some post hoc and a priori tests. In J.G. Hunt & L.L. Larson (Eds.), *Contingency approaches to leadership* (pp. 29-62). Carbondale, IL: Southern Illinois University Press.
- House, R.J. & Mitchell, T.R. (1974). Path-goal theory of leadership. *Journal of Contemporary Business*, 3, 81-97.
- Ilgen, D.R., Hollenbeck, J.R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process-output models to IMOI models. *Annual Review of Psychology*, 56, 517-543.
- Ilies, R., Nahrgang, J.D., & Morgeson, F.P. (2007). Leader-member exchange and citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, 92, 269-277.
- James, L.R., & Brett, J.M. (1984). Mediators, moderators, and tests for mediation. *Journal of Applied Psychology*, 69, 307-321.
- James, L.R., Demaree, R.G., & Wolf, G. (1993). rwg: An assessment of within-group agreement. *Journal of Applied Psychology*, 78, 306-309.
- Janis, I.L. (1982). *Groupthink*. Boston: Houghton Mifflin.
- Janz, B.D., Colquitt, J.A., & Noe, R.A. (1997). Knowledge worker team effectiveness: The role of autonomy, interdependence, team development, and contextual support variables. *Personnel Psychology*, 50, 877-904.
- Jaques, E. (1990). In praise of hierarchy. *Harvard Business Review*, 68, 127-133.
- Johnson, D.W., & Johnson, R.T. (2005). New developments in social interdependence theory. *Genetic, Social, and General Psychology Monographs*, 131, 285-358.

- Jones, R.A., Rafferty, A.E., & Griffin, M.A. 2006. The executive coaching trend: Towards more flexible executives. *Leadership and Organization Development Journal*, 27, 584-596.
- Judge, T.A., & Piccolo, R.F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89, 755-768.
- Judge, T.A., Piccolo, R.F., & Illies, R. (2004). The forgotten ones? The validity of consideration and initiating structure in leadership research. *Journal of Applied Psychology*, 89, 36-51.
- Kanfer, R., & Ackerman, P.L. (1989). Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. *Journal of Applied Psychology*, 74, 657-690.
- Kanter, R.M. (2011). Zoom in, zoom out. *Harvard Business Review*, 89, 112-116, 131.
- Kark, R., Shamir, B., & Chen, G. (2003). The two faces of transformational leadership: Empowerment and dependency. *Journal of Applied Psychology*, 88, 246-255.
- Katz, D., & Kahn, R.L. (1978). *The social psychology of organizations*. New York: Wiley.
- Keller, R.T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: A longitudinal study of research and development project team performance. *Journal of Applied Psychology*, 91, 202-210.

- Kirkman, B.L., Chen, G., Farh, J.L., Chen, Z.X., & Lowe, K.B. (2009). Individual power distance orientation and follower reactions to transformational leaders: A cross-level, cross-cultural examination. *Academy of Management Journal*, 52, 744-764.
- Kirkman, B.L., Mathieu, J.E., Cordero, J.L., Rosen, B., & Kukenberger, M. (2011). Managing a new collaborative entity in business organizations: Understanding organizational communities of practice effectiveness. *Journal of Applied Psychology*, 96, 1234-1245.
- Kirkman, B.L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42, 58-74.
- Kirkman, B.L., Rosen, B., Tesluk, P.E., & Gibson, C.B. (2004). The impact of team empowerment on virtual team performance: The moderating role of face-to-face interaction. *Academy of Management Journal*, 47, 175-192.
- Kirkman, B.L., Tesluk, P.E., & Rosen, B. (2001). Assessing the incremental validity of team consensus ratings over aggregation of individual level data in predicting team effectiveness. *Personnel Psychology*, 54, 645-667.
- Klimoski, R., & Mohammed, S. (1994). Team mental model: Construct or metaphor? *Journal of Management*, 20, 403-437.
- Kline, R.B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford Press.

- Kozlowski, S.W.J., & Bell, B.S. (2003). Work groups and team in organizations. In W.C. Borman, D.R. Ilgen & R. Klimoski (Eds.), *Handbook of psychology: Industrial and organizational psychology* (pp. 333-375). London: Wiley.
- Kozlowski, S.W.J., Gully, S.M., McHugh, P.P., Salas, E., & Cannon-Bowers, J.A. (1996). A dynamic theory of leadership and team effectiveness: Developmental and task contingent leader roles. *Research in Personnel and Human Resources Management, 14*, 253-306.
- Kozlowski, S.W.J., Gully, S.M., Nason, E.R., & Smith, E.M. (1999). Developing adaptive teams: A theory of compilation and performance across levels and time. In R. Ilgen & E.D. Pulakos (Eds.), *The changing nature of work and performance: Implications for staffing, personnel actions, and development* (pp. 240-294). San Francisco: Jossey-Bass.
- Kozlowski, S.W.J., & Ilgen, D.R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest, 7*, 77-124.
- Kozlowski, S.W.J., Watola, D.J., Nowakowski, J.M., Kim, B.H., & Botero, I.C. (2009). Developing adaptive teams: A theory of dynamic team leadership. In E. Salas, G.F. Goodwin & C.S. Burke (Eds.), *Team effectiveness in complex organizations: Cross-disciplinary perspectives and approaches* (pp. 113-155). New York: Routledge.
- Lance, C.E., Butts, M.M., & Michels, L.C. (2006). The sources of four commonly reported cutoff criteria. *Organizational Research Methods, 9*, 202-220.

- Lawler, E.E., Mohrman, S.A., & Ledford, G.E. (1995). *Creating high performance organizations: Practices and results of employee involvement and total quality management in fortune 1000 companies*. San Francisco: Jossey-Bass.
- Leavitt, H.J. (1975). Suppose we took groups seriously. In E. L. Cass & F. G. Zimmer (Eds.), *Man and work in society* (pp. 67-77). New York: Van Nostrand Reinhold.
- LePine, J.A., Piccolo, R.F., Jackson, C.L., Mathieu, J.E., & Saul, J.R. (2008). A meta-analysis of teamwork processes: Tests of a multidimensional model and relationships with team effectiveness criteria. *Personnel Psychology*, 61, 273-307.
- Li, N., Kirkman, B. L., & Harris, T. B. (2011). *Standing out or fitting in? A multilevel examination of leader-member exchange theory in the workgroup context*. Paper presented at the annual meeting of the Southern Management Association (November), Savannah, GA.
- Liao, H., & Rupp, D.E. (2005). The impact of justice climate and justice orientation on work outcomes: A cross-level multifoci framework. *Journal of Applied Psychology*, 90, 242-256.
- Liden, R.C., Wayne, S.J., & Stilwell, D. (1993). A longitudinal study on the early development of leader-member exchanges. *Journal of Applied Psychology*, 78, 662-674.
- Lim, B.C., & Ployhart, R.E. (2004). Transformational leadership: Relations to the five-factor model and team performance in typical and maximum contexts. *Journal of Applied Psychology*, 89, 610-621.

- Lord, R.G. (1977). Functional leadership behavior: Measurement and relation to social power and leadership perceptions. *Administrative Science Quarterly*, 22, 114-133.
- MacKinnon, D.P. (2008). *Introduction to statistical mediation analysis*. Mahwah, NJ: Erlbaum Psych Press.
- MacKinnon, D. P., Fritz, M. S., Williams, J., & Lockwood, C. M. (2007). Distribution of the product confidence limits for the indirect effect: program PRODCLIN. *Behavior Research Methods*, 39, 384-389.
- Manz, C.C., & Sims, H.P. (1987). Leading workers to lead themselves: The external leadership of self-managing work teams. *Administrative Science Quarterly*, 32, 106-129.
- Marks, M.A., Mathieu, J.E., & Zaccaro, S.J. (2001). A temporally based framework and taxonomy of team processes. *Academy of Management Review*, 26, 356-376.
- Marks, M.A., Zaccaro, S.J., & Mathieu, J.E. (2000). Performance implications of leader briefings and team-interaction training for team adaptation to novel environments. *Journal of Applied Psychology*, 85, 971-986.
- Marrone, J.A. (2010). Team boundary spanning: A multilevel review of past research and proposals for the future. *Journal of Management*, 36, 911-940.
- Marsh, H.W., & Grayson, D. (1995). Latent variable models of multitrait-multimethod data. In R.H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 177-198). Thousand Oaks, CA: Sage.

- Mathieu, J.E., Gilson, L.L., & Ruddy, T.M. (2006). Empowerment and team effectiveness: An empirical test of an integrated model. *Journal of Applied Psychology, 91*, 97-108.
- Mathieu, J., Maynard, M.T., Rapp, T., & Gilson, L. (2008). Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. *Journal of Management, 34*, 410-476.
- Mathieu, J.E., Heffner, T.S., Goodwin, G.F., Salas, E., & Cannon-Bowers, J.A. (2000). The influence of shared mental models on team process and performance. *Journal of Applied Psychology, 85*, 273-283.
- Mathieu, J.E., & Marks, M.A. (2006). Working paper.
- McGrath, J.E. (1962). *Leadership behavior: Some requirements for leadership training*. Washington, DC: U.S. Civil Service Commission, Office of Career Development.
- McGrath, J.E. (1964). *Social psychology: A brief introduction*. New York: Holt, Rinehart, & Winston.
- McGrath, J.E., Arrow, H., & Berdahl, J.L. (2000). The study of groups: Past, present, and future. *Personality and Social Psychology Review, 4*, 95-105.
- McIntyre, R.M., & Salas, E. (1995). Measuring and managing for team performance: Emerging principles from complex environments. In R.A. Guzzo & E. Salas (Eds.), *Team effectiveness and decision making in organizations* (pp. 9-45). San Francisco: Jossey-Bass.

- Medsker, G. J., Williams, L. J., & Holahan, P. J. (1994). A review of current practices for evaluating causal models in organizational behavior and human resources management research. *Journal of Management*, 20, 439–464.
- Morgeson, F.P. (2005). The external leadership of self-managing teams: Intervening in the context of novel and disruptive events. *Journal of Applied Psychology*, 90, 497-508.
- Morgeson, F.P., DeRue, D.S., & Karam, E.P. (2010). Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of Management*, 36, 5-39.
- Nystrom, P. C. (1990). Vertical exchanges and organizational commitments of American business managers. *Group & Organization Management*, 15, 296-312.
- Oser, R., McCallum, G.A., Salas, E., & Morgan, B.B. (1989). *Toward a definition of teamwork: An analysis of critical team behaviors* (Technical Report 89-001). Orlando, FL: Naval Training Systems Center.
- Pearce, C.L., & Conger, J.A. (2003). All those years ago: The historical underpinnings of shared leadership. In C. L. Pearce and J. A. Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership* (pp. 1-18). Thousand Oaks, CA: Sage.
- Pearce, C.L., & Sims Jr, H.P. (2002). Vertical versus shared leadership as predictors of the effectiveness of change management teams: An examination of aversive, directive, transactional, transformational, and empowering leader behaviors. *Group Dynamics: Theory, Research, and Practice*, 6, 172-197.

- Pearce, C.L., Sims Jr, H.P., Cox, J.F., Ball, G., Schnell, E., Smith, K.A., & Trevino, L. (2003). Transactors, transformers and beyond: A multi-method development of a theoretical typology of leadership. *Journal of Management Development*, 22, 273-307.
- Pillai, R., & Williams, E.A. (2004). Transformational leadership, self-efficacy, group cohesiveness, commitment, and performance. *Journal of Organizational Change Management*, 17, 144-159.
- Ployhart, R.E. & Vandenberg, R.J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, 36, 94-120.
- Podsakoff, P.M., Ahearne, M., & MacKenzie, S.B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology*, 82, 262-270.
- Podsakoff, P.M., Mackenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.
- Preacher, K.J., Rucker, D.D., & Hayes, A.F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185-227.
- Rico, R., Sanchez-Manzanares, M., Gil, F., and Gibson, C.B. (2008). Team coordination processes : A team knowledge-based approach. *Academy of Management Review*, 33, 163-185.

- Rousseau, D.M. (1985). Issues of level in organizational research: Multilevel and cross-level perspectives. In L.L. Cummings & B.M. Staw (Eds.), *Research in organizational behavior* (Vol. 7, pp. 1-37). Greenwich, CT: JAI Press.
- Royce, W.W. (1970). Managing the development of large software systems: Concepts and techniques. Paper presented at the IEEE WESTCON, Los Angeles, CA.
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, 5, 359-371.
- Saavedra, R., Earley, P.C., & Van Dyne, L. (1993). Complex interdependence in task-performing groups. *Journal of Applied Psychology*, 78, 61-72.
- Salas, E., Dickinson, T.L., Converse, S.A., & Tannenbaum, S.I. (1992). Toward an understanding of team performance and training. In R.W. Swezey & E. Salas (Eds.), *Teams: Their training and performance* (pp. 3-29). Westport, CT: Ablex Publishing.
- Salas, E., Stagl, K.C., & Burke, C.S. (2004). 25 years of team effectiveness in organizations: Research themes and emerging needs. In C.L. Cooper & I.T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 47-91). New York: John Wiley & Sons.
- Sashkin, M. (1988). The visionary leader. Charismatic leadership: The elusive factor in organizational effectiveness. In J.A. Conger & R.N. Kanungo (Eds.), *The Jossey-Bass management series* (pp. 122-160). San Francisco: Jossey-Bass.

- Schaubroeck, J., Lam, S.S.K., & Cha, S.E. (2007). Embracing transformational leadership: Team values and the impact of leader behavior on team performance. *Journal of Applied Psychology, 92*, 1020-1030.
- Schriesheim, C.A., Castro, S.L., & Yammarino, F.J. (2000). Investigating contingencies: An examination of the impact of span of supervision and upward controllingness on leader-member exchange using traditional and multivariate within-and between-entities analysis. *Journal of Applied Psychology, 85*, 659-677.
- Schutz, W.C. (1961). On group composition. *Journal of Abnormal and Social Psychology, 62*, 275-281.
- Shen, W., Kiger, T., Davies, S., Rasch, R., Simon, K., & Ones, D. (2011). Samples in applied psychology: Over a decade of research in review. *Journal of Applied Psychology, 96*, 1055-1064.
- Sobel, M.E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*, 290-312.
- Somech, A. (2006). The effects of leadership style and team process on performance and innovation in functionally heterogeneous teams. *Journal of Management, 32*, 132-157.
- Sparrowe, R.T., & Liden, R.C. (1997). Process and structure in leader-member exchange. *Academy of Management Review, 22*, 522-552.
- Stajkovic, A.D., Lee, D., & Nyberg, A.J. (2009). Collective efficacy, group potency, and group performance: Meta-analyses of their relationships, and test of a mediation model. *Journal of Applied Psychology, 94*, 814-828.

- Steiger, J.H., & Lind, J.C. (1980). *Statistically-based tests for a number of common factors*. Paper presented at the annual spring meeting of the psychometric society (May). Iowa City, IA.
- Steiner, I.D. (1972). *Group processes and productivity*. New York: Academic Press.
- Stewart, G.L., & Barrick, M.R. (2000). Team structure and performance: Assessing the mediating role of intrateam process and the moderating role of task type. *Academy of Management Journal*, 43, 135-148.
- Stogdill, R.M. (1950). Leadership, membership and organization. *Psychological Bulletin*, 47, 1-14.
- Stogdill, R.M. (1963). *Manual for the leader behavior description questionnaire-form XII*. Columbus, OH: Bureau of Business Research, The Ohio State University.
- Stout, R.J., Cannon-Bowers, J.A., Salas, E., & Milanovich, D.M. (1999). Planning, shared mental models, and coordinated performance: An empirical link is established. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 41, 61-71.
- Suls, J., & Wheeler, L. (2000). *Handbook of social comparison: Theory and research*. New York: Plenum Press.
- Swider, B.W., Barrick, M.R., Harris, T.B., & Stoverink, A.C. (2011). Managing and creating an image in the interview: The role of interviewee initial impressions. *Journal of Applied Psychology*, 96, 1275-1288.
- Thompson, J.D. (1967). *Organizations in action*. New York: McGraw-Hill.
- Tichy, N.M., & Devanna, M.A. (1986). *The transformational leader*. New York: Wiley.

- Tuckman, B.W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63, 384-399.
- Van de Ven, A.H., Delbecq, A.L., & Koenig, R. (1976). Determinants of coordination modes within organizations. *American Sociological Review*, 41, 322-328.
- Van Dyne, L., & LePine, J.A. (1998). Helping and voice extra-role behavior: Evidence of construct and predictive validity. *Academy of Management Journal*, 41, 108-119.
- Vecchio, R.P., & Gobdel, B.C. (1984). The vertical dyad linkage model of leadership: Problems and prospects. *Organizational Behavior and Human Performance*, 34, 5-20.
- Wageman, R., & Gordon, F.M. (2005). As the twig is bent: How group values shape emergent task interdependence in groups. *Organization Science*, 16, 687-700.
- Watson, W.E., Michaelsen, L.K., & Sharp, W. (1991). Member competence, group interaction, and group decision making: A longitudinal study. *Journal of Applied Psychology*, 76, 803-809.
- Weaver, J.L., Bowers, C.A., Salas, E., & Cannon-Bowers, J.A. (1995). Networked simulations: New paradigms for team performance research. *Behavior Research Methods*, 27, 12-24.
- Whyte, W.F. (1955). *Money and motivation: An analysis of incentives in industry*. New York: Harper.
- Wu, J.B., Tsui, A.S., & Kinicki, A.J. (2010). Consequences of differentiated leadership in groups. *Academy of Management Journal*, 53, 90-106.

- Yukl, G. (1999). An evaluation of conceptual weaknesses in transformational and charismatic leadership theories. *Leadership Quarterly*, 10, 285-305.
- Zaccaro, S.J. (2001). *The nature of executive leadership: A conceptual and empirical analysis of success*. Washington, D.C.: APA Books.
- Zaccaro, S.J., Foti, R.J., Kenny, D.A. (1991a). Self-monitoring and trait-based variance in leadership: An investigation of leader flexibility across multiple group situations. *Journal of Applied Psychology*, 76, 308-315.
- Zaccaro, S.J., Gilbert, J., Thor, K.K., & Mumford, M.D. (1991b). Leadership and social intelligence Linking social perceptiveness and behavioral flexibility to leader effectiveness. *Leadership Quarterly*, 2, 317-331.
- Zaccaro, S.J., Heinen, B., & Shuffler, M. (2009). Team leadership and team effectiveness. In E. Salas, G.F. Goodwin & C.S. Burke (Eds.), *Team effectiveness in complex organizations: Cross-disciplinary perspectives and approaches* (pp. 83-111). New York: Routledge.
- Zaccaro, S.J., & Klimoski, R. (2002). The interface of leadership and team processes. *Group & Organization Management*, 27, 4-13.
- Zaccaro, S.J., Rittman, A.L., & Marks, M.A. (2001). Team leadership. *Leadership Quarterly*, 12, 451-483.
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37, 197-206.

APPENDIX A

SUMMARY OF LEADERSHIP FUNCTIONS (ADAPTED FROM MORGESON ET AL., 2010)

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Compose Team (Transition)</p> <ul style="list-style-type: none"> - Links to coordination (interpersonal process; Dahlin, Weingart, & Hinds, 2005) - Links to communication (interpersonal process; Keller, 2001; Barry & Stewart, 1997) - Links to helping behavior (interpersonal process; Barrick, Stewart, Neubert, & Mount, 1998) - Links to cohesion (interpersonal process; Barrick, Stewart, Neubert, & Mount, 1998) - Links to within-team conflict (interpersonal process; Pelled, Eisenhardt, & Xin, 1999) - Links to information exchange (interpersonal process; Drach-Zahavy & Somech, 2001) - Positively related to ability to learn and adapt to changing environments (DeRue, Hollenbeck, Johnson, Ilgen, & Jundt, 2008; Gibson & Vermuelen, 2003; LePine, 2003) - Related to team-creativity (Pirola-Merlo & Mann, 2004; Taggar, 2002) - Predicts task and contextual performance (Barry & Stewart, 1997; Morgeson, Reider, & Campion, 2005) 	<ul style="list-style-type: none"> - Selects highly competent members - Selects members who have previously worked well together - Selects members that have previously worked well with the leader - Selects members so there is the right mix of skills on the team - Selects highly motivated members
<p>Define Mission (Transition)</p> <ul style="list-style-type: none"> - Directs team toward goal accomplishment (next function; Morgeson et al., 2010) - Importance of defining and establishing a shared mission is seen across numerous studies that have examined leadership processes in teams (e.g., Galanes, 2003; Pielstick, 2000; Posner, 2008) - A common understanding of mission is just as important as having a mission itself (Barry, 1991) 	<ul style="list-style-type: none"> - Ensures clear direction - Emphasizes how important it is to have a sense of mission - Develops and articulates a clear mission - Ensures a clear understanding of purpose - Provides a clear vision of where team is going

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Establish Expectations and Goals (Transition)</p> <ul style="list-style-type: none"> - Setting challenging and realistic goals aids in accomplishing team's task (Einstein & Humphreys, 2001; Knight, Durham, & Locke, 2001) - Teams with well-defined goals outperform those without well-defined goals (meta-analysis; O'Leary-Kelly, Martocchio, & Frink, 1994) - Facilitate team creativity [among knowledge workers] (Amabile, Schatzel, Moneta, & Kraimer, 2004) - Goal setting and clarifying expectations are important leader behaviors (Wageman, 1997) - At individual-level, goal setting theory suggests clear and challenging goals are important for directing individual action and motivating individuals to achieve performance targets (Locke & Latham, 1990) - At team-level, goal setting processes help teams for a common identity (Morgeson et al., 2010; Sivunen, 2006) 	<ul style="list-style-type: none"> - Defines and emphasizes expectations - Asks team (or members) to follow standard rules and regulations - Communicates expectations of what needs to be done - Communicates expectations of high performance - Maintains clear standards of performance - Sets or help set challenging and realistic goals - Establishes or helps establish goals for work - Ensures there are clear performance goals - Works to develop performance goals - Reviews goals for realism, challenge, and business necessity

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Structure and Plan (Transition)</p> <ul style="list-style-type: none"> - Similar to directive leadership (Tschan et al., 2006), initiating structure (Katerburg & Hom, 1981; Keller, 1992, 2006; Powell & Butterfield, 1984), team design (Wageman, 2001), and task leadership (Eys, Loughhead, & Hardy, 2007) 	<ul style="list-style-type: none"> - Defines and structures own work and the work of the team (or members) - Identifies when key aspects of the work need to be completed - Works to develop the best possible approach to work - Develops or helps develop standard operating procedures and standardized processes - Clarifies task performance strategies - Ensures clear roles
<p>Train and Develop (Transition)</p> <ul style="list-style-type: none"> - Important initially and over time as leaders/members identify deficiencies. Can be task-related or interpersonal related (Morgeson et al., 2010) - Actions directed towards coaching, developing, and mentoring the team have been shown to enhance team processes and effectiveness (Hackman & Wageman, 2005; Kozlowski et al., 1996; Wageman, 2001) - Links to team innovation and creativity (Dackert, Loov, & Martensson, 2004) - Training in regards to interpersonal processes is associated with effective teamwork, such as developing trust and cohesion (Zaccaro et al., 2001), communication (Warkentin & Beranek, 1999), and developing shared mental models and transactive memory (Austin, 2003; Kozlowski, Gully, Nason, & Smith, 1999; Marks, Zaccaro, & Mathieu, 2000) 	<ul style="list-style-type: none"> - Ensures necessary problem solving and interpersonal skills - Assists in learning how to do the work - Provides task-related instructions - Helps to further develop skills - Facilitates learning from past events or experiences

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Sense Making (Transition)</p> <ul style="list-style-type: none"> - If teams can adapt to different events, team functioning can be disrupted and have negative impact on performance (DeRue et al., 2008; Morgeson and DeRue, 2006) - Involves identifying important events, interpreting these events as they relate to team performance, and communicating these events to the team (Morgeson et al., 2005; Weick, 1995; Zaccaro et al., 2001) - Links to shared mental models and team performance (Klimoski and Mohammed; Marks et al., 2000; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000) - Leader sensemaking is negatively related to team satisfaction, but positively related to reports of leader effectiveness (Morgeson, 2005). 	<ul style="list-style-type: none"> - Assists in interpreting things that happen inside the team - Assists in interpreting things that happen outside the team - Facilitates understanding of events or situations - Helps interpret internal or external events - Helps make sense of ambiguous situations
<p>Provide Feedback (Transition)</p> <ul style="list-style-type: none"> - Feedback is an essential input into the regulatory mechanisms that direct and control behavior (Bandura, 1986; Carver & Scheir, 1981). - In social systems, feedback is essential for the functioning, maintenance, and development of systems over time (Katz & Kahn, 1978) - Assists in adaptability (Morgeson et al., 2010) - From functional perspective, feedback processes are integral part of team leadership processes that allow teams to assess performance, adapt, and develop over time (Einstein & Humphreys, 2001; Mohrman et al., 1995) - Feedback relates to team learning behavior (Gibson & Vermeulen, 2003) - Feedback is important for adaptation in dynamic task environments (Kozlowski et al., 1996; Mohrman, Mohrman, & Lawler, 1992). - Feedback satisfies team needs because it facilitates both task and interpersonal processes (Morgeson et al., 2010; Taggar, 2002) - May promote team identification and commitment (Sivunen, 2006) 	<ul style="list-style-type: none"> - Rewards performance according to performance standards - Reviews relevant performance results - Communicates business issues, operating results and performance results - Provides positive feedback when performance is high (satisfactory) - Provides corrective feedback

LEADERSHIP FUNCTIONS AND RELEVANT RESEACRH FINDINGS	SAMPLE LEADER BEHAVIORS
Monitor (Action) <ul style="list-style-type: none"> - Provides key data for all other functions (Morgeson et al., 2010) - Positively related to team cohesion and ratings of leader effectiveness (Kane et al., 2002) 	<ul style="list-style-type: none"> - Monitors changes in the external environmental - Monitors performance - Keeps informed about what othersare doing - Requests task-relevant information - Notices flaws in task procedures or outputs
Manage Boundaries (Action) <ul style="list-style-type: none"> - Involves two competing challenges: Protecting team and leveraging outside resources (Morgeson et al., 2010) - Boundary-spanning may be related to team effectiveness (Burk et al., 2006) 	<ul style="list-style-type: none"> - Buffers the influence of external forces or events - Helps different teams (individuals) communicate with one another - Acts as a representative with other parts of the organization (e.g., other teams, management) - Advocates on behalf of the team - Helps to resolve difficulties between different teams (or individuals)

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Challenge (Action)</p> <ul style="list-style-type: none"> - Encourages opportunistic thinking (Pearce & Sims, 2002) - Leader is “inventor” and responsible for creating new approaches or methods that are challenging to team members (Latham, 1987) - May be captured by the intellectual stimulation component of transformational leadership (Bass, 1985). This may include supporting members as they question past ways of doing things (Avolio, Waldman, & Einstein, 1988) - Among R&D teams, intellectual stimulation (which might be predicted by the “challenge” function) was positively related to project quality and budget/schedule performance (Keller, 1992) as well as project profitability in the marketplace (Keller, 2006) <p>Intellectual stimulation is typically an individually-focused concept, but may work at the team level by increasing team member satisfaction and motivation (Morgeson et al., 2010; Pratt & Jiambalvo, 1981)</p>	<ul style="list-style-type: none"> - Reconsiders key assumptions in order to determine the appropriate course of action - Emphasizes the importance and value of questioning - Challenges the status quo - Suggests new ways of looking at how to complete work <p>Contributes ideas to improve how the work is done</p>
<p>Perform Tasks (Action)</p> <ul style="list-style-type: none"> - Improves team productivity (Kane et al., 2002) - May be even more critical in face of disruptive events (Morgeson, 2005) 	<ul style="list-style-type: none"> - Will “pitch in” and help with work - Will “roll up his/her sleeves” and help with work - Works with team members to help do work - Will work along with the team to get its work done - Intervenes to help get the work done

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Problem Solving (Action)</p> <ul style="list-style-type: none"> - Positively related to team performance (Kim, Min, & Cha, 1999) above other functions. Hiller et al. (2006) doesn't agree. Common method and source variance may be to blame (Morgeson et al., 2010) 	<ul style="list-style-type: none"> - Implements or helps implement solutions to problems - Seeks multiple perspectives when solving problems - Creates solutions to problems in the work - Participates in problem solving - Develops solutions to task and relationship-related problems
<p>Provide Resources (Action)</p> <ul style="list-style-type: none"> - Resources are necessary to task completion (Hackman, 1987) - May signal support to the team (Shea and Guzzo, 1987) - Helps transition, action, and interpersonal processes (Mathieu, Gilson, & Ruddy, 2006) 	<ul style="list-style-type: none"> - Obtains and allocates resources - Seeks information and resources to facilitate initiatives - Sees to it to gets what is needed from other teams - Makes sure that the equipment and supplies needed are available - Helps find and obtain "expert" resources

LEADERSHIP FUNCTIONS AND RELEVANT RESEARCH FINDINGS	SAMPLE LEADER BEHAVIORS
<p>Encourage Self-Management (Action)</p> <ul style="list-style-type: none"> - Increases adaptability and resilience (from self-management as substitute for leadership theory; Manz & Sims, 1980; derived from self-control theory and social learning theory; Thoreson & Mahoney, 1974; Bandura, 1977) - Positively relates to team effectiveness (Manz & Simz, 1984). Other findings have been mixed (Cohen et al., 1996; Cohen et al., 1997) - Encouraging self-management is positively related to member satisfaction (Cohen et al., 1997) 	<ul style="list-style-type: none"> - Encourages responsibility for determining the methods, procedures, and schedules for how work gets done - Urges autonomy for decisions - Encourages the team (or members(to make most of autonomous work-related decisions - Encourages autonomous problem-solving - Encourages responsibility for internal affairs - Encourages self-performance assessments
<p>Support Social Climate (Action)</p> <ul style="list-style-type: none"> - Team's social climate is critical factor (Fleishman et al., 1991; Hackman & Walton, 1986; Marks et al., 2001; Mumford et al., 2006) - Promotes interpersonal processes (Morgeson et al., 2010) - Positively linked to team productivity (Campion, Medsker, & Higgs, 1993) - Positively linked to superior ratings of leaders (by members; Druskat & Wheeler, 2003) 	<ul style="list-style-type: none"> - Responds promptly to needs or concerns - Engages in actions that demonstrate respect and concern - Goes beyond own interests for the good of the team (or members) - Does things to make it pleasant to be a team member - Looks out for the personal well-being of team members

APPENDIX B

TEAM MEMBER SURVEY

RATING SCALE						
1 Never	2 Rarely (10%)	3 Occasionally (30%)	4 Sometimes (50%)	5 Frequently (70%)	6 Usually (90%)	7 Always
To what extent does your leader do the following for...			...individual team members?	...the team as a whole?	...smaller subsets of team members?	
[Task-Focused]						
1. Ensures clear task performance goals.						
2. Structures how work is done.						
3. Clarifies task performance strategies.						
4. Provides task-related instructions.						
5. Reviews relevant task performance results.						
6. Monitors task performance.						
[Person-Focused]						
7. Helps develop solutions to relationship-related problems (i.e., personal disagreements).						
8. Responds promptly to personal needs or concerns.						
9. Engages in actions that demonstrate respect and concern.						
10. Goes beyond own interests for the good of others.						
11. Trusts us.						

RATING SCALE						
1 Not at All	2 Very Small Extent	3 Small Extent	4 Some Extent	5 Large Extent	6 Very Large Extent	7 Always

My leader...

[Leader Flexibility]							
1. ...Explores a wide variety of approaches to our team's problems.	1	2	3	4	5	6	7
2. ...Plans ahead rather than reacts to a situation.	1	2	3	4	5	6	7
3. ...Creates multiple courses of action during planning.	1	2	3	4	5	6	7
4. ...Adapts well to changes in his/her leadership role.	1	2	3	4	5	6	7
5. ...Adjusts well to new equipment, processes, or procedures in our team's tasks.	1	2	3	4	5	6	7
6. ...Adapts his/her personal approach to the situation at hand.	1	2	3	4	5	6	7
7. ...Copes with stressful events effectively.	1	2	3	4	5	6	7
8. ...Maintains effective leadership in challenging circumstances.	1	2	3	4	5	6	7
9. ...Adapts to change with minimal stress.	1	2	3	4	5	6	7
10. ...Overall, given his/her work context, I would consider my leader to be a flexible person.	1	2	3	4	5	6	7
[Leader Switching]							
11. ...Is able to move effortlessly between managing individuals on the team, the team as a whole, and subgroups with the team across different situations.	1	2	3	4	5	6	7
12. ...Effectively switches his/her focus between individuals, the whole team, and subgroups within the team.	1	2	3	4	5	6	7
13. ...Is effective at motivating individuals, the entire team, or subgroups within the team when the situation calls for it.	1	2	3	4	5	6	7
14. ...Can seamlessly alternate his/her focus on individuals, the whole team, or subgroups within the team.	1	2	3	4	5	6	7
15. ...Is able to simultaneously balance the needs of individuals, the entire team, and subgroups within the team.	1	2	3	4	5	6	7

RATING SCALE						
1 = Strongly Disagree	2 = Somewhat Disagree	3 = Slightly Disagree	4 = Neutral	5 = Slightly Agree	6 = Somewhat Agree	7 = Strongly Agree

[Task Interdependence]

1. We work as a team, not a collection of individuals with their own tasks to perform.	1	2	3	4	5	6	7
2. Our work is not done until everyone has done his or her part.	1	2	3	4	5	6	7
3. We often have to share materials and ideas to get our work done.	1	2	3	4	5	6	7
4. In our group we work together a lot.	1	2	3	4	5	6	7
5. In our group we frequently need to count on each other a lot.	1	2	3	4	5	6	7
6. We often have to talk to other people in the group to do our job well.	1	2	3	4	5	6	7

RATING SCALE						
1= Not at All	2= Very Small Extent	3= Small Extent	4= Some Extent	5= Large Extent	6= Very Large Extent	7= Always

To what extent does your team actively work to...

[Task-Related Processes]

1. Identify our main tasks?	1	2	3	4	5	6	7
2. Identify the key challenges that we expect to face?	1	2	3	4	5	6	7
3. Determine the resources that we need to be successful?	1	2	3	4	5	6	7
4. Set goals for the team?	1	2	3	4	5	6	7
5. Ensure that everyone on our team clearly understands our goals?	1	2	3	4	5	6	7
6. Link our goals with the strategic direction of the organization?	1	2	3	4	5	6	7
7. Develop an overall strategy to guide our team activities?	1	2	3	4	5	6	7
8. Prepare contingency ("if-then") plans to deal with uncertain situations?	1	2	3	4	5	6	7
9. Know when to stick with a given working plan, and when to adopt a different one?	1	2	3	4	5	6	7
10. Regularly monitor how well we are meeting our team goals?	1	2	3	4	5	6	7
11. Use clearly defined metrics to assess our progress?	1	2	3	4	5	6	7
12. Seek timely feedback from stakeholders (e.g., customers, top management, other organizational units) about how well we are meeting our goals?	1	2	3	4	5	6	7
13. Monitor and manage our resources (e.g., financial, equipment, etc.)?	1	2	3	4	5	6	7
14. Monitor important aspects of our work environment (e.g., inventories, equipment and process operations, information flows)?	1	2	3	4	5	6	7
15. Monitor events and conditions outside the team that influence our operations?	1	2	3	4	5	6	7

RATING SCALE						
1= Not at All	2= Very Small Extent	3= Small Extent	4= Some Extent	5= Large Extent	6= Very Large Extent	7= Always

To what extent does your team actively work to...

[Task-Related Processes, continued]

1. Develop standards for acceptable team member performance?	1	2	3	4	5	6	7
2. Balance the workload among our team members?	1	2	3	4	5	6	7
3. Assist each other when help is needed?	1	2	3	4	5	6	7
4. Communicate well with each other?	1	2	3	4	5	6	7
5. Smoothly integrate our work efforts?	1	2	3	4	5	6	7
6. Coordinate our activities with one another?	1	2	3	4	5	6	7

[Interpersonal Processes]

7. Deal with personal conflicts in fair and equitable ways?	1	2	3	4	5	6	7
8. Show respect for one another?	1	2	3	4	5	6	7
9. Maintain group harmony?	1	2	3	4	5	6	7
10. Take pride in our accomplishments?	1	2	3	4	5	6	7
11. Develop confidence in our team's ability to perform well?	1	2	3	4	5	6	7
12. Encourage each other to perform our very best?	1	2	3	4	5	6	7
13. Share a sense of togetherness and cohesion?	1	2	3	4	5	6	7
14. Manage stress?	1	2	3	4	5	6	7
15. Keep a good emotional balance in the team?	1	2	3	4	5	6	7

APPENDIX C

TEAM LEADER SURVEY

RATING SCALE						
1 = Strongly Disagree	2 = Somewhat Disagree	3 = Slightly Disagree	4 = Neutral	5 = Slightly Agree	6 = Somewhat Agree	7 = Strongly Agree

When leading my crew, I typically...

[Leader Flexibility]

1. Explore a wide variety of approaches to your team's problems.	1	2	3	4	5	6	7
2. Plan ahead rather than reacted to a situation.	1	2	3	4	5	6	7
3. Create multiple courses of action during planning.	1	2	3	4	5	6	7
4. Adapt well to changes in your leadership role.	1	2	3	4	5	6	7
5. Adjust well to new equipment, processes, or procedures in your team's tasks.	1	2	3	4	5	6	7
6. Adapt your personal approach to the situation at hand.	1	2	3	4	5	6	7
7. Cope with stressful events effectively.	1	2	3	4	5	6	7
8. Maintain effective leadership in challenging circumstances.	1	2	3	4	5	6	7
9. Adapt to change with minimal stress.	1	2	3	4	5	6	7
10. Overall, given my work context, I consider myself to be a flexible person.	1	2	3	4	5	6	7

RATING SCALE						
1 = Strongly Disagree	2 = Somewhat Disagree	3 = Slightly Disagree	4 = Neutral	5 = Slightly Agree	6 = Somewhat Agree	7 = Strongly Agree

In general, members of the group I lead...

[Team Helping Behaviors]

7. ...volunteer to do things for this work group.	1	2	3	4	5	6	7
8. ...help orient new employees in this group.	1	2	3	4	5	6	7
9. ...attend functions that help this work group.	1	2	3	4	5	6	7
10. ...assist others in this group with their work for the benefit of the group.	1	2	3	4	5	6	7
11. ...get involved to benefit this workgroup.	1	2	3	4	5	6	7
12. ...help others in this group learn about the work.	1	2	3	4	5	6	7
13. ...help others in this group with their work responsibilities.	1	2	3	4	5	6	7

APPENDIX D

DEPARTMENT CHIEF SURVEY

Rating Scale						
1 = Extremely Below Average	2 = Below Average	3 = Slightly Below Average	4 = Average	5 = Slightly Above Average	6 = Above Average	7 = Extremely Above Average

	Station/Shift			
<i>Compared to other crews, this team...</i>	1A	2A	1B	2B
1. ...meets or exceeds its goals.				
2. ...completes its tasks on time.				
3. ...makes sure that services meet or exceed quality standards.				
4. ...responds quickly when problems come up.				
5. ...is a productive team.				
6. ...successfully solves problems that slow down their work.				

VITA

Name: Thomas Brady Harris

Address: 4221 TAMU
Department of Management
Mays Business School
Texas A&M University
College Station, TX 77843-4221

Email Address: tharris@mays.tamu.edu

Education: B.B.A., Finance, Texas Tech University, 2003
M.B.A., Finance & Management, University of Florida, 2006
Ph.D., Management, Texas A&M University, 2012